Art. 29. *An infected port is one in which any of the following diseases exist, namely, plague, cholera, yellow fever, or other pestilential disease in severe epidemic form.*

(*g*) That the provisions of Chapter IX of the Sanitary Code be made effective.

CHAPTER IX

The Pan American Sanitary Bureau

Functions and Duties

Art. 54. *The organization, functions, and duties of the Pan American Sanitary Bureau shall include those heretofore determined for the International Sanitary Bureau by the various International Sanitary and other Conferences of American Republics and such additional administrative functions and duties as may be hereafter determined by Pan American Sanitary Conferences.*

Art. 55. *The Pan American Sanitary Bureau shall be the central agency coordinating sanitary information to and from said Republics. For this purpose it shall, from time to time, designate representatives to visit and confer with the sanitary authorities of the various signatory Governments on public health matters; and such representatives shall be given all available sanitary information in the countries visited by them in the course of their official visits and conferences.*

Art. 56. *In addition, the Pan American Sanitary Bureau shall perform the following specific functions:*

To supply to the sanitary authorities of the signatory Governments, through its publications or in other appropriate manner, all available information relative to the actual status of the communicable diseases of man, new invasions of such diseases, the sanitary measures undertaken, and the progress effected in the control or eradication of such diseases; new methods for combating disease; morbidity and mortality statistics; public health organization and administration; progress in any of the branches of preventive medicine; and other pertinent information relative to sanitation and public health in any of its phases, including a bibliography of books and periodicals on public hygiene.

In order to discharge more efficiently its functions it may undertake cooperative epidemiological and other studies; may employ at headquarters and elsewhere experts for this purpose; may stimulate and facilitate scientific researches and the practical application of the results therefrom; and may accept gifts, benefactions, and bequests, which shall be accounted for in the manner now provided for the maintenance funds of the Bureau.

Art. 57. *The Pan American Sanitary Bureau shall advise and consult with the sanitary authorities of the various signatory Governments relative to public health problems and the manner of interpreting and applying the provisions of this Code.*

Art. 58. *Officials of the National health services may be designated as representatives ex officio of the Pan American Sanitary Bureau, in addition to their regular duties, and when so designated they may be empowered to act as sanitary representatives of one or more of the signatory Governments when properly designated and accredited to so serve.*

Art. 59. *Upon request of the sanitary authorities of any of the signatory Governments, the Pan American Sanitary Bureau is authorized to take*

the necessary preparatory steps to bring about an exchange of professors, medical and health officers, experts or advisers in public health of any of the sanitary sciences, for the purpose of mutual aid and advancement in the protection of the public health of the signatory Governments.

Art. 60. *For the purpose of discharging the functions and duties imposed upon the Pan American Sanitary Bureau, a fund of not less than $50,000 shall be collected by the Pan American Union, apportioned among the signatory Governments on the same basis as are the expenses of the Pan American Union.*

(*h*) That the form of the consular bill of health which may be issued to vessels be substantially that referred to in article 16 of the Sanitary Code.

Art. 16. *The master of any vessel or aircraft which proceeds to a port of any of the signatory Governments is required to obtain at the port of departure and ports of call a bill of health, in duplicate, issued in accordance with the information set forth in the Appendix and adopted as the standard bill of health.*

NOTE.—Following is the form of the International Standard Form Bill of Health as given in the Appendix of the Pan American Sanitary Code:

INTERNATIONAL STANDARD FORM BILL OF HEALTH

INFORMATION CONCERNING THE VESSEL

I.......................................(official title)....................................
(the person authorized to issue the bill, at the port of.....................................)
do hereby state that the vessel hereinafter named clears (or leaves) from the port of............
under the following circumstances.
Name of vessel..............................., nationality...................................
Master..; tonnage, gross..............................;
net...................................; name of medical officer...............................
Number of officers......................, of crew, including petty officers....................;
officers' families................., passengers destined for...................................;
(Country of destination)
Embarking at this port..................................; first cabin.........................;
second cabin......................., steerage.......................................; total number
of passengers on board..
Ports visited within preceding four months...
....
....
Location of vessel while in port—wharf.., open
bay.......................; distance from shore...
If any passengers or members of crew disembarked on account of sickness, state disease...........
Time vessel was in port (date and hour of arrival)..
(date and hour of departure)..
Character of communication with shore...
Sanitary condition of vessel...
Sanitary measures, if any, adopted while in port...
Date of last fumigation for the destruction of rodents..
Number of rodents obtained...
Port where fumigated...and officials supervising the fumigation..
Method of fumigation used (for rodents)...
(for mosquitoes)...

INFORMATION CONCERNING THE PORT

Sanitary conditions of port and vicinity..
Prevailing diseases at port and vicinity...

Number of cases of and deaths from the following named diseases during the two weeks ending.............

Diseases	Number of cases [1]	Number of deaths [1]	Remarks (Any conditions affecting the public health existing in the port or vicinity to be here stated)
Yellow fever			
Asiatic cholera			
Cholera nostras or cholerine			
Smallpox			
Typhus fever			
Plague			
Leprosy			

[1] When there are no cases or deaths, entry to that effect must be made

Health Office of the port of...(when practicable this certificate should be signed by the health officer of the port)
Date of last case of.
Cholera..
Yellow fever...
Human plague...
Typhus...
Rodent plague..
Measures, if any, imposed by the municipality against rats during the last six months..........

....
(Signature of port health officer)

I certify that the vessel has complied with the rules and regulations made under the terms of the Pan American Sanitary Code, and with the laws and regulations of the country of destination.
The vessel leaves this port bound for.......................................via.....................
Given under my hand and seal this..day
of......................................., 192....

....
(Signature of consular officer)
....

[SEAL]
Countersigned by

....
Medical Officer.

(*i*) That the Pan American Sanitary Bureau endeavor to induce those countries which have colonies or other territories in America to adhere to the provisions of the Pan American Sanitary Code.

(*j*) That in order to add to, modify, or derogate any of the provisions of the Pan American Sanitary Code it shall be necessary that one or more of the signatory powers shall have requested modification at least six months prior to the time such change is proposed for adoption; and to become effective the change must be approved by at least two-thirds of the delegates to the Sanitary Convention which meets first after notification of the desired change.

(*k*) That there be included in the Pan American Sanitary Code a provision asking all powers signatory or adherent to create in their principal ports a Commission on Infectious Diseases, which body shall be charged with the responsibility of making an official diagnosis in "suspicious" cases of quarantinable disease.

(2) Further recommendations and topics, etc., for consideration by the Eighth Pan American Sanitary Conference are as follows:

(*a*) That there be included (in the Sanitary Code) an article asking all signatory powers, for purposes of exportation, to regard as narcotics, or as heroic drugs, those preparations that are so considered by the country to which they are exported.

(*b*) The control of drug addiction.

(*c*) International regulation of commerce in drugs.

(*d*) Detention and treatment of drug addicts.

(*e*) The centralization of all (Federal) health activities in a ministry of health.

(*f*) The contribution of municipalities of funds for State health activities (exercised jointly in such cities).

(*g*) The study of bubonic plague from its nosological, epidemiological, and medico-social aspects, recommending to each government the creation of technical commissions, charged with the duty of investigating and reporting upon the different problems offered by this disease.

(*h*) Intensification in all countries of the campaign in favor of infant welfare in the triple concept of hygiene, of eugenics, and of homiculture, and a study of infant morbidity and mortality.

(*i*) Study of intestinal parasitology on the American continent.

(*j*) Municipal and other water supplies, their clarification and purification.

(*k*) Control and quarantine of diseases of plants.

(*l*) **Detection, control, and treatment of human carriers of contagious disease.**

(*m*) Cooperative control of venereal disease.

(*n*) Prophylaxis and treatment of leprosy and tuberculosis.

(*o*) Sex hygiene and related educational measures.

(*p*) Industrial hygiene.

(*q*) Vital statistics (morbidity and mortality).

(*r*) Fly eradication.

(*s*) Prophylaxis of trachoma.

(*t*) Study of "alastrim."

(*u*) Sanitary regulation of immigration.

(*v*) Study and control of malaria. Work of special committees in each country.

(*w*) Study of the geographical distribution of disease (America).

(*x*) The supplying of quinine in the different countries as related to the reduction and control of malaria (recommendation of the Seventh Conference).

(*y*) How may Governments impose the rat-proofing of vessels? (Suggested by the Pan American Sanitary Bureau.)

(*z*) How may the international agreements providing for the mutual reporting of contagious diseases best be made effective? (Proposed by the Pan American Sanitary Bureau.)

(*aa*) What is to be the future development of the Pan American Sanitary Bureau? (A paper is to be submitted entitled "Organization, Development, Functions, and Present Status of The Pan American Sanitary Bureau. Its Future.")

(*bb*) Progress reports on sanitation. (To be submitted by each country represented.)

(*cc*) Hospital facilities and administration in relation to health and sanitation (in America).

(NOTE.—It will be understood that this program may, by resolution, be amplified at the time of the meeting of the Conference.)

Organizing Committee

Dr. CARLOS ENRIQUE PAZ SOLDÁN, Provisional President of the Eighth Pan American Sanitary Conference; Vocal of the Pan American Sanitary Bureau, Washington, D. C.; and Professor of Hygiene of the Medical Faculty of Lima.

Dr. SEBASTIÁN LORENTE, Director of Public Health of Peru; President of the Council of Infant Welfare: and President of the Commission named by the First Pan American Conference of National Directors of Health, at Washington, to arrange the Program of the Eighth Conference.

Dr. BALTASAR CARAVEDO, Chief of the Hygiene and Industrial Welfare Service; member of the Board of Guardians for Minors; and Chief Physician of the Victor Larco Herrera Asylum.

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Señor Presidente de la Comisión Organizadora de la VIII Conferencia Sanitaria Panamericana, Lima, Peru, Apartado No. 987.

COURT DECISIONS ON PASTEURIZATION[1]

By James A. Tobey, LL. B., Dr. P. H., *Scientific Consultant, The Borden Co., New York*

Courts of last resort in this country, including the United States Supreme Court and the State courts of appeals, have frequently had occasion to pass on the various legal aspects of the sanitary control of milk. In nearly every instance the courts have sustained the proper regulation of milk supplies, recognizing that reasonable control of such products is essential to the protection of the public health.[2]

These numerous court decisions now form a part of our public health jurisprudence; for law is court made, as well as the result of legislative action. Under our tripartite system of government, the legislature ascertains the need for statutes and passes those which it considers wise or expedient. These statutes and such necessary regulations as are authorized by them are enforced by the executive branch of government. When a cause of action is presented, whether based on the operation of statutes or not, the judicial branch applies the proper legal principles in the interests of justice, and this procedure often involves an interpretation of the written law and a determination of its constitutionality. In order to know what the law is, therefore, an examination of the decisions of courts must be made, in addition to a perusal of the statutes.

There are probably about 150 court decisions on the various phases of milk control. In 1924 the author collected 121 such decisions, and this list was published by the United States Public Health Service in Public Health Reports for July 18, 1924.[3] Of this number of decisions only six have been found dealing directly with the subject of Pasteurization. In all but one of these cases ordinances or regulations requiring Pasteurization under certain conditions have been sustained. A review of these decisions, with appropriate comments, will be of value in revealing the legal precedents on this subject, which is now so important to sanitarians.

The first decision on Pasteurization came in 1914, when the Supreme Court of Illinois upheld as valid an ordinance of the city of Chicago, which required continuous Pasteurizing machines to be equipped with apparatus so that records would be kept in a locked chamber under the control of the commissioner of health.[4] The power of the city to require Pasteurization was not questioned, but the stipu-

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[1] Read before the Conference of State and Provincial Health Authorities of North America, Washington, D. C., May 14, 1927.

[2] For general discussion of legal aspects of milk control, see Public Health Law (1926). Williams and Wilkins, Baltimore.

[3] Issued in separate form as Reprint No. 939.

[4] Koy *v.* Chicago, 263 Ill. 122, 104 N. E. 1104, Ann. Cas. 1915, C. 67.

lation of a certain type of apparatus was challenged as unreasonable. On this point the court said:

The city having power to require milk to be pasteurized is not limited to the imposition of a penalty for a violation of this requirement, but may prescribe the conditions under which the pasteurization shall be done in order to prevent an evasion of the ordinance and insure that the product shall be such as the ordinance requires.

This is an important principle and one which means that the city, in the interests of the public health, may impose restrictions and duties which are inconvenient and expensive to private business, but which, nevertheless, will not be considered oppressive or unreasonable, because they are for the common good.

Another municipal ordinance requiring Pasteurization was sustained in 1920, when the second case[5] on this subject was decided by the Supreme Court of Wisconsin. In one respect this case is even stronger than the first, for the court actually took judicial notice of the facts that milk is easily infected with germs, is unsuitable for human consumption when so infected, and that Pasteurization for 30 minutes at 145° F. destroys all germs of disease.

"In the light of these known facts and practices regarding the Pasteurization treatment of milk to destroy pathogenic germs," said the court in its opinion, "and the systems of inspection and certification to make it a healthful food and preserve it in that state in the process of distribution among the people of the city, it can not be said that the common council of the city have provided unreasonable and oppressive regulations for the promotion of the public health of the people, nor that the powers conferred on the health officer for the enforcement of the ordinance are unreasonable or prejudicial to the private rights and property interests of the plaintiffs and others similarly situated."

In this case, an ordinance of the city of Milwaukee required that all milk sold therein, except certified milk and inspected (tuberculin tested) milk, be Pasteurized by either the holding or flash system, the conditions for each being set forth. A group of milk dealers obtained a temporary injunction against the enforcement of the ordinance, but this was dissolved by the lower court, whose action was upheld on appeal.

Shortly after this Wisconsin decision, the regulations of local boards of health, adopted in conformity to State law, were sustained in two New York cases.[6] In one instance a health regulation of the city of Poughkeepsie in effect prohibited the sale therein of any milk, except that designated grade A raw and certified milk, unless Pas-

[5] Pfeffer v. City of Milwaukee, 171 Wis. 514, 177 N. W. 850, 10 A. L. R. 128.

[6] People ex rel Ogden v. McGowan, 118 Misc. Rep. 828, 195 N. Y. S. 286 (affirmed without opinion, 200 App. Div. 836, 191 N. Y. S. 946); Moll v. Lockport, 194 N. Y. S. 250.

teurized; while, in the other case, a health regulation of the city of Lockport went even farther and debarred all milk except "certified[,] grade A raw and grade A Pasteurized." In both cases the supreme court, which in New York is a court of general jurisdiction, held valid these regulations which were "among the many deemed necessary to provide for the people of the city a clean, pure, and wholesome supply of milk and cream, free from disease and germs."

"It is important to the whole community," said the court,[7] "that the supply of milk and cream should not be contaminated with impurities or infected with disease, and that those selling milk should use all the precautions that a scientific investigation of the proper methods of treating milk to secure the result has found to be useful and efficient. It is the duty of the health authorities to see that this is accomplished by the establishment of such reasonable regulations as may be necessary to meet existing conditions and ward off impending dangers to the public health. * * * The requirement that the lower grades of milk shall be Pasteurized is for the protection of public health, and every reasonable effort in this direction should be encouraged."

The fifth and last decision upholding Pasteurization is a brief North Carolina one, handed down in 1924.[8] The town of Tarboro in that State passed an ordinance to the effect that, after a certain date, it would be unlawful for any milk or cream to be sold for human consumption in Tarboro unless Pasteurized. The ordinance also required all milk sellers to secure a permit from the county health officer. Both of these provisions were pronounced valid by the supreme court, which relied on the previous decisions of Koy *v.* Chicago and Pfeffer *v.* Milwaukee, which are described above.

So far so good. Now we come to the latest and most destructive of the decisions, and one which is directly contrary to all of the others. This is a Missouri case, decided in 1926,[9] in which the court reached the conclusion, from the evidence offered, that raw milk, as a general thing, was a better food than Pasteurized milk, and that it was unreasonable to require milk in St. Louis to be Pasteurized. The cause of safe milk in that State is definitely retarded by this decision, because, of course, from a scientific standpoint, raw milk is not a better food than Pasteurized milk.

Legally there is justification for this particular decision. In the first place, the ordinance in question was defectively worded, and, in the second place, a reading of the opinion indicates that the arguments in favor of Pasteurization might have been much more effectively presented. A study of this decision ought to be of value in

[7] People ex rel Ogden *v.* McGowan, supra.

[8] State *v.* Edwards, 187 N. C. 259, 121 S. E. 444.

[9] State ex rel Knese *v.* Kinsey, 282 S. W 437.

helping to prevent similar results in other jurisdictions. If the case had been adequately presented, the court would perhaps have reached a different conclusion, for the opinion itself states that "It might be shown that under conditions existing in St. Louis raw milk can not be safely used; that to allow dairymen to sell it and deal in it is likely to be injurious to the health of the inhabitants of the city, and therefore the regulation requiring milk to be Pasteurized is a reasonable regulation. Without conceding the soundness of that proposition, in order to have any substantial basis it must be supported by facts."

Under authorization of State law St. Louis had passed an ordinance that purported to require all milk not certified to be Pasteurized. The printed ordinance as presented to the court was a jumble of words, with a sentence or more omitted, and the court properly said that it was difficult to attach any meaning to it. Several milk dealers refused to Pasteurize their milk, and, when permits to sell were refused them by the board of public service, brought an action of mandamus to compel the board to issue permits. The case was heard by a commissioner appointed by the court, who took a great volume of evidence.

The opinion states that the city introduced evidence to show that the dairies of these milk dealers were insanitary, that dust sifted down from lofts, and that chickens and geese wandered about, though how these contaminated the milk was not brought out. "There was more evidence of like character and inconclusiveness," said the court. The milk dealers not only denied these facts and presented evidence to show that their milk was pure, but brought in physicians, chemists, and bacteriologists, as experts, and the users of milk to support their contention. Their testimony was so compelling that the court decided that "From the great weight of the evidence it is plain that raw milk as a *general thing* is more nutritious, easier assimilated, and better food, especially for children, than Pasteurized milk, though it is probable that some individuals may thrive better on Pasteurized and boiled milk than on raw milk."

"There is nothing in the record," said the court further, "to show that it is impractical for the city to cause sufficient inspection and standardization of dairies so as to reasonably insure the production and distribution of wholesome raw milk free from dangerous bacteria, without the expense attending the production of certified milk." As a consequence of this view, the peremptory writ of mandamus was issued and the sale of raw milk was legally permitted in St. Louis. Education of the public to demand Pasteurized milk is about the only remedy left; though when the inevitable milk-borne epidemic occurs, and experience has often demonstrated that it will eventually

occur among the users of a raw-milk supply, Pasteurization will no doubt be adopted in St. Louis.

The great weight of legal authority is, as shown by the court decisions outlined, to the effect that the requirement that milk shall be Pasteurized in accordance with standards set by health authorities is reasonable and well calculated to protect the public health. This is the general rule of law, a rule which, apparently, does not apply in Missouri at present. Milk is the most important of the foods of man, and it is entirely proper that every possible sanitary safeguard should be employed in the endeavor to secure a pure supply. In putting into effect provisions for the safety of milk, the fact that those who produce or distribute milk are inconvenienced thereby does not render the regulations invalid, for the welfare of the whole is of more importance than the convenience of a few.

A SURVEY OF VENEREAL DISEASE PREVALENCE IN DETROIT [1]

FROM THE AMERICAN HYGIENE ASSOCIATION, IN COOPERATION WITH THE BOARD OF HEALTH OF DETROIT AND THE PUBLIC HEALTH COMMITTEE OF THE WAYNE COUNTY (MICH.) MEDICAL SOCIETY

A real lack of dependable information regarding the prevalence of venereal diseases has been felt by those carrying on work in this field. There is none for any general population group or locality in the United States. Such facts are necessary for intelligent understanding of many of the problems. For this purpose, cities of the United States typical of various conditions were selected for study. Detroit was chosen for the reason that it is a large city where industrial conditions have produced prosperity. There has been relatively little unemployment in Detroit; wages have been high; the municipal policy toward prostitution has tended toward regulation; and certain conditions have prevailed which are generally believed to have venereal diseases as an accompaniment.

The names of all the physicians were assembled, and 2,200 physicians and a group of 125 public and private hospitals and institutions and persons engaged in social work were visited. Osteopaths were included in this investigation. Of 2,180 physicians visited, 1,747 were found practicing medicine. A simple questionnaire was sent to these physicians and institutions, asking the number of cases of syphilis and gonorrhea actively under treatment or observation on May 15, 1926. Two groups each for male and female patients were made—those under 16 years of age and 16 years and over. A distinction was also made between acute and chronic cases. Cases of

[1] Abstract of an article by Walter M. Brunet, M. D., and Mary S. Edwards, statistician, appearing in Venereal Disease Information for June 20, 1927, issued by the division of venereal diseases, U. S. Public Health Service.

syphilis were defined as acute in which the infection had been contracted a year prior to the inquiry. The cases of gonorrhea were termed acute when six months and less had elapsed since infection.

The physicians were asked to give their opinion as to whether there had been an increase or a decrease in the prevalence of syphilis of late years.

There was some hesitancy on the part of some members of the profession to sign their name to the questionnaire; however, only eight, that is, less than one-half of 1 per cent, refused to give information. They were not specialists. The remainder cooperated, being assured that their information would be kept confidential. Of the 1,739 physicians who answered, 49 per cent reported one or more cases of venereal disease under their observation on the specified day. Thirty-five per cent of the hospitals and clinics of Detroit reported cases of venereal diseases among their patients.

A total of 16,735 cases, 13.47 per 1,000 of the city's population, were registered in this inquiry. Of this total, 8,665 (51.7 per cent) were syphilitic, a rate of 6.98 cases per 1,000 population, and 8,070 (48.3 per cent) gonorrheal, or 6.50 per 1,000 population.

About 95 per cent of the infections occurred among persons 16 years or over. During the years 1924 and 1925, 261 and 304, respectively, private physicians reported venereal diseases to the board of health. The totals of cases reported were 1,854 and 2,012, respectively, making an average number of cases of 7.1 and 6.6 per physician reporting. During the year ended May 31, 1926, 533 reports for syphilis were received from 145 physicians; during the six months ended May 31, 1926, 102 physicians reported 341 gonococcal infections. The total number reporting either or both diseases was 197.

Prevalence rate, per 1,000 population, of syphilis and of gonorrhea for males and females of two age groups—Cases reported as under observation on May 15, 1926, in Detroit, Mich.

	Male			Female		
	Total	Acute	Chronic	Total	Acute	Chronic
Total syphilis and gonorrhea:						
All ages	17.86	7.87	10.00	8.52	2.92	5.61
Under 16 years	1.64	.87	.77	2.33	1.06	1.27
16 years and over	24.29	10.64	13.66	11.37	3.77	7.60
Syphilis:						
All ages	8.29	3.14	5.15	5.50	1.69	3.81
Under 16 years	1.30	.68	.62	1.44	.70	.74
16 years and over	11.05	4.11	6.94	7.37	2.15	5.22
Gonorrhea:						
All ages	9.58	4.73	4.85	3.02	1.23	1.80
Under 16 years	.34	.19	.16	.89	.36	.53
16 years and over	13.24	6.52	6.71	4.01	1.63	2.38

Doctor Brunet states that it is not possible to arrive at a definite conclusion regarding the proportion of cases seen by private physicians and those which they actually report to local boards of health.

According to the answers to the questionnaire, 50 per cent were treating such cases. In Detroit, where the clinics are considered exceptionally well organized, the physicians still share largely in the treatment of venereal disease. This is shown by the fact that of 1,739 physicians of Detroit who cooperated, 49 per cent reported one or more cases.

Regarding the trend of venereal-disease incidence, 387 physicians, 313 of whom were treating these diseases and 74 of whom were not, voiced their opinion. Fifty-three per cent of those treating cases reported a general increase in the incidence of syphilis and gonorrhea, 19 per cent a general decrease, 23 per cent believed it stationary, while 5 per cent of the answers could not be classified under the restricted groups of the inquiry. The physicians who registered increase had been treating an average of 19 cases; those reporting decrease, an average of 10 cases; those considering the number stationary treated an average of 12. Into this personal impression enter features of error, such as not appreciating that an increase in reputation may have helped them, or an increase of reputation of some man new in the neighborhood may have decreased the clientele. The authors do not think that the impression gained by more than 50 per cent of the profession is reliable for the above reasons. Of 74 physicians who had no cases under treatment, 39 reported a decrease, 15 an increase, and 18 no change. One physician reported a decrease in old cases, the number of new cases remaining the same.

The board of health, which examined almost 20,000 individuals in 1925, believes that venereal infections are decreasing. The reason for their conviction is that the percentage of positive diagnoses in the total number of individuals examined is decreasing. Among the reasons for the opinions given by those physicians who believed that an increase was occurring are lower morals in the younger generation, migration to the cities, with lower morals, neglect and ignorance of prophylaxis, and failure to control prostitution. Some physicians stated that a larger number of cases are detected than formerly, making an apparent rather than an actual increase. A large number of those finding a decrease attribute it to education of the people regarding dangers from venereal disease, the advocating of treatment, and the knowledge of prophylaxis. One physician, on the basis of 3,000,000 case records of employees and test results, sees a decline. He is not willing to pronounce on gonorrhea incidence in the same sense.

THE ACCURACY OF MORTALITY RECORDS

Much has been done in the past 35 years to establish order and system in the classification of diseases and causes of death. In 1893 no two countries in the world were using exactly the same forms and

methods for statistical classification of causes of death; whereas at the present time most of the civilized countries of the world have adopted the International List for their mortality records. In spite of the general use of this list, however, there still exist serious limitations to the accuracy of death statistics, which become especially apparent to the mathematician through failure of the purported causes of death to conform to the tendencies of errors in scientific observation. These limitations are due largely to difficulties of diagnosis—combinations of causes of death, changes in current diagnostic practice, a temporary focus of attention on some particular disease, etc.—and to a failure on the part of vital-statistics officers of health departments to strive for a higher degree of accuracy by investigating cases in which the causes given on the death certificate should arouse suspicion. An interesting discussion of these difficulties and of the manner in which some of them are obviated in Boston is contained in an article published in the Monthly Bulletin of the Health Department of Boston, Mass., for May, 1927.

It is practically impossible for a death to occur in Boston without being recorded at the health department. With few exceptions, deaths come to the knowledge of the division of vital statistics through application for a burial permit, which is issued only upon the presentation of a death certificate satisfactory to the department of health. If the certificate is unsatisfactory, the case is referred to the medical staff for investigation.

Broncho-pneumonia is not always regarded as a satisfactory sole cause of death. It may be allowed to pass unchallenged in a young child, but in an adult an effort is made to disclose a contributory cause. Even lobar pneumonia is often suspected because of a tendency to use it when other cause is not apparent.

In myocarditis the data on the death certificate relating to age, contributory causes, their duration, etc., must be consistent with the condition justifiably referred to as "myocarditis."

Undertakers no longer obtain burial permits in Boston on a certificate of death from "acute indigestion."

A critical attitude toward causes of deaths of infants has indicated to the Boston health officials that in infant deaths attributed to gastroenteritis, and other acute infection as well, there is often something biologically wrong with the infant, and vital statistics are failing to show the extent to which infant mortality is a problem of eugenics rather than of feeding.

Investigation of maternal deaths has shown that differences of opinion of qualified investigators have been frequent enough to be a matter of serious statistical importance. It has been made evident that there is an underlying cause not yet understood, contributing to vulnerability to infection. An almost constant annual ratio of

7 deaths per 1,000 births obtains in Boston, mostly from puerperal septicemia; and it seems mathematically improbable that those who escaped puerperal septicemia avoided the exposure which proved fatal to the other seven.

Many cases in which death was certified as being due to encephalitis lethargica (a few years ago) and to pulmonary embolism (immediately following the death of ex-President Roosevelt) were found, on investigation, to have been erroneously diagnosed, the diagnoses having been influenced by the temporary focus of medical attention on these conditions.

Death certificates for certain acute conditions, such as anthrax, tetanus, or diphtheria, for example, are reasonably accurate, whereas for other acute diseases—whooping cough, for example—are found untrustworthy. On the other hand, a large proportion of deaths of human beings are not the result of acute illness; but death, even in comparatively young persons, marks the termination of a considerable period of symptoms of improper biological functioning.

The article concludes by noting that, in spite of inaccuracies, conventional vital-statistics data can be used in many ways to furnish reliable conclusions, and cautions biometricians regarding an intelligent use of such data, based on a thorough understanding of the method of compilation and a knowledge of the purpose which they may be intended to serve.

COURT DECISIONS RELATING TO PUBLIC HEALTH

Injunction to restrain enforcement of ordinance for prevention of pollution of source of city's water supply, located in United States forest reservation, denied.—(Washington Supreme Court; Brown *v.* City of Cle Elum, 255 P. 961; decided April 28, 1927.) The city of Cle Elum, under contract with the United States, took its water supply from a lake outside the city and within the limits of a United States forest reservation. The city, pursuant to statutory authority, passed an ordinance designed to prevent the pollution of the source of its water supply. This ordinance, among other things, prohibited swimming, fishing, and boating in the said lake. The United States had rented cottage sites along part of the lake, and the plaintiff in this case was a tenant of the United States. He sought to restrain the defendant city from enforcing or attempting to enforce the ordinance, particularly in so far as it prohibited or attempted to prohibit swimming, fishing, or boating in the lake. The validity of the ordinance was attacked on two grounds: (1) That its enactment was an attempted exercise of the police power of the city over lands and waters owned by the United States, and (2) that it was unreasonable.

Regarding the first contention, the supreme court said:

The ordinance being enacted in pursuance of the police power expressly granted to the city by the terms of the statutes above quoted, we must start with the presumption that its enactment is a valid exercise of that power. * * * The argument seems to be that, because the lands in question are the property of the United States and in its forest reservation, and because of its water appropriation, the city can not lawfully exercise over them the police power it has assumed to do. We can not agree with this view of the law. The forest reservations are not like military reservations over which the United States usually reserves governmental jurisdiction. Our forest reservations are generally but withdrawals by the Unites States, for purposes of conservation, of certain designated public lands from sale or disposition into private ownership, certain acts of Congress making regulations with reference to their use; the United States exercising dominion over such lands as owner almost wholly in its proprietary, rather than in its governmental, capacity.

The court then quoted certain sections of the United States laws concerning jurisdiction over persons within national forests and concerning the use of waters therein, and proceeded to state:

We think this language plainly evidences a legislative intent on the part of Congress to leave to the States full freedom in the exercise of their ordinary police power over the territory of forest reservations, as well as elsewhere within the territorial limits of the respective States; in any event, in so far as the exercise of the police power has to do with the restraining of acts of private citizens, looking to the preservation of public health, as well as the preservation of peace and good order in other respects. We are of the opinion, therefore, that the plaintiff, being a private citizen seeking only the exercise and protection of what he conceives to be his private property rights, is in no position to challenge the police power of the State here granted to the city, upon the ground that the city has no jurisdiction to exercise that power over these lands and waters merely because title thereto is in the United States.

Concerning the second contention, the court stated as follows:

It is further contended that the ordinance is void because of its unreasonableness. We do not see our way clear to so decide in this case, in view of the circumstances here appearing. We are in this case only called upon to determine the reasonableness or unreasonableness of the ordinance in its particular prohibitions of respondent's swimming, fishing, and boating in and upon the lake. In view of the comparatively inferior nature of the property right in respondent, if he have any property right, to do any of the particular prohibited acts in question, the only ones which he claims that he is unlawfully deprived of the right to do, we think he is not entitled to injunctive relief looking to the preventing of the city's attempting to enforce its ordinance by the usual criminal proceedings.

City sewage-disposal plant held to be a nuisance and injunctive relief granted.—(Texas Court of Civil Appeals; City of Marlin *v.* Criswell et al., 293 S. W. 910; decided March 24, 1927.) A suit was brought by resident property owners in the town of Marlin against the city of Marlin to restrain the operation of the city's sewage-disposal plant and the enlargement of said plant, and also to require the city to move its plant to some other locality. The property owners alleged that

the use of the plant caused offensive odors and gases to emanate therefrom, which were detrimental to health and which rendered it practically impossible for the said owners to occupy their residences with any comfort. It was also alleged that the city had voted bonds to rebuild its sewage-disposal plant, and that the said plant could not be built on the ground where the existing plant was located in such a way as to remove the objections lodged against the existing plant. The cause was submitted on special issues, and by the judgment of the trial court the city was permanently restrained from maintaining its existing sewage-disposal plant and enjoined from enlarging said plant at the place where it was then located, and was also required within six months to remove its existing plant to some other place. The trial court's judgment was affirmed by the court of civil appeals, which said:

> * * * The evidence shows beyond controversy that the present system is exceedingly offensive to all of the appellees, as well as a large number of other citizens of Marlin. * * * We think the evidence is sufficient to support the jury's finding that the proposed plant which the city is preparing to erect will cause the same offensive odors and that the same objections may be urged against it. * * *
>
> * * * It seems to be the settled law of this State that a city may, the same as a private individual, be restrained from maintaining a nuisance. * * *

DEATH RATES IN A GROUP OF INSURED PERSONS

Rates for Principal Causes of Death for April, 1927

The accompanying table is taken from the Statistical Bulletin for May, 1927, published by the Metropolitan Life Insurance Co., and presents the mortality experience of the industrial insurance department of the company for April, 1927, as compared with that for March and for April, 1926. The rates for this year are based on a strength of approximately 18,000,000 insured persons of the industrial populations of the United States and Canada.

The death rate for April among these insured persons was 9.5 per 1,000—the lowest rate for that month on the records of the company. For the fourth successive month this year the death rate for this group registered a decline from that for the corresponding month of 1926. The decline in April, however, was more pronounced than for any of the three preceding months, and amounted to 21.6 per cent. There was also the usual seasonal decline from the mortality for March.

Every important cause of death, except typhoid fever, diphtheria, accidents (including automobile fatalities), and suicides, recorded a lower rate in April than in the same month of 1926. The most conspicuous declines were those for measles, whooping cough, in-

fluenza, heart disease, pneumonia, and chronic nephritis. The continued low rate for tuberculosis is gratifying and gives ground for the renewed hope that a new minimum death rate for this disease will be registered this year. Puerperal conditions have shown declines in the first four months of 1927.

The high death rate for typhoid fever—the highest April mortality ever recorded for this group—was not the result of a general prevalence of the disease, but was brought about by the outbreak in Montreal, Canada, 80 of the 99 actual deaths for the month having occurred in Canada.

The diphtheria situation, while still less favorable than during the early months of last year, is improving.

The automobile fatality rate (15.7) compares very unfavorably with that for April last year (13.7), showing an increase of nearly 15 per cent.

Death rates (annual basis) for principal causes per 100,000 lives exposed, April and March, 1927, and April and year, 1926

[Industrial department, Metropolitan Life Insurance Co.]

Cause of death	Rate per 100,000 lives exposed [1]			
	Apr., 1927	Mar., 1927	Apr., 1926	Year 1926[2]
Total, all causes	954.1	1028 5	1216.8	942.7
Typhoid fever	6.7	3 0	2 5	4.2
Measles	7 5	7 9	21 6	10 2
Scarlet fever	3.8	4 9	5 1	3.4
Whooping cough	7 6	8 3	15 6	9.6
Diphtheria	9 7	11 3	9 1	9 7
Influenza	27.1	32.3	92.6	31 0
Tuberculosis (all forms)	107 2	114 1	116 5	98 7
Tuberculosis of respiratory system	95 0	100 3	100 9	86.5
Cancer	77 0	77 2	78 2	73.5
Diabetes mellitus	17 5	19 2	20.4	16.7
Cerebral hemorrhage	56.6	58 9	62 1	55.5
Organic diseases of heart	137.3	149 4	174.3	133.9
Pneumonia (all forms)	110 7	119 9	193 7	97.9
Other respiratory diseases	16.6	19 9	19.9	13.1
Diarrhea and enteritis	15.2	16 3	18.0	29.8
Bright's disease (chronic nephritis)	66.1	79.6	83.8	73.3
Puerperal state	14.7	17.2	18.2	15 3
Suicides	8.9	9.9	7.7	7.6
Homicides	6.0	8.1	7.7	7.0
Other external causes (excluding suicides and homicides)	54.8	55.9	53 8	62.2
Traumatism by automobiles	15.7	12.3	13 7	16.7
All other causes	203 2	215.0	215.7	190.4

[1] All figures include infants insured under 1 year of age
[2] Based on provisional estimate of lives exposed to risk in 1926.

PATIENTS IN INSTITUTIONS FOR THE FEEBLE-MINDED

Data for December, 1926

Reports for the month of December, 1926, were received from 32 institutions for the care of the feeble-minded.

The following tables give a summary and analysis of the reports:

Movement of patient population of 32 institutions for the feeble-minded, December, 1926

	Male	Female	Total
Number of institutions included:			
Public			31
Private			1
Total			32
Patients on books Dec. 1, 1926:			
In institutions	15,105	14,708	29,813
On temporary leave	2,123	1,645	3,768
Total	17,228	16,353	33,581
Admitted during December:			
First admissions	158	128	286
Readmissions	10	14	24
Not accounted for	3	1	4
Total received during December	171	143	314
Total on books during month	17,399	16,496	33,895
Discharged or placed on indefinite parole during December	39	36	75
Died during month of December	46	41	87
Not accounted for	3	0	3
Total discharged, died, and not accounted for	88	77	165
Patients on books Dec. 31, 1926:			
In institutions	14,824	14,569	29,393
On temporary leave	2,487	1,850	4,337
Total	17,311	16,419	33,730

Analysis of movement of patient population of 32 institutions for the feeble-minded, December, 1926

	Male	Female	Total
Per cent change in number of patients during December:			
Total (increase)	0.48	0.40	0.44
In institutions (decrease)	1.86	.95	1.41
On temporary leave (increase)	17.15	12.46	15.10
Per cent of total patients absent on temporary leave:			
Dec. 1	12.32	10.06	11.22
Dec. 31	14.37	11.27	12.86
Per cent of total admissions (excluding cases not accounted for) which were:			
First admissions	94.05	90.14	92.26
Readmissions	5.95	9.86	7.74
Per cent of total patients discharged during December (based on average number for month)	.23	.22	.22
Male patients per 1,000 females, Dec. 31			1,054
Deaths per 1,000 under treatment (annual basis)	31.13	29.26	30.22

PUBLIC HEALTH ENGINEERING ABSTRACTS

Studies of the Malaria Problem of Porto Rico. Anon. *Porto Rico Health Review*, Vol. II, No. 7, January, 1927, pp. 30–32. (Abstract by H. A. Johnson.)

This is a part of a report of malaria studies (Paper VIII) carried on in the island during the years 1924 and 1925 by the International Health Board.

The breeding of *A. grabhamii* seemed to go through a well-defined cycle of prolific and light intensity during the year. Prolific breeding occurred from December to April, with a peak coming at the end of January. During the remainder of the year *A. grabhamii* breeding was very light and somewhat restricted to certain areas. This was the reverse of the breeding cycle of *A. albimanus*, the generally accepted vector of malaria in the island.

A. grabhamii seemed to be somewhat more restricted in its choice of breeding areas than did *A. albimanus*. Shaded ditches and ditches densely overgrown with aquatic vegetation, especially grasses, were the conditions of choice, although there was hardly a single natural water deposit that did not yield *A. grabhamii* at some time during the year. The author lays considerable stress on the suitability of cool shade for the prolific production of the species. Algæ seemed to be of no importance, as breeding occurred irrespective of the amount present. Salinity of the water is mentioned as having possibly a slight deterrent effect, although the larvæ of this species was found associated with *A. albimanus* in water with a salt content of 2.5 per cent. The effect of H ion concentration requires more study before a conclusion can be drawn.

In view of the character of the breeding places attractive to *A. grabhamii*, minnows or other fish appear to be of little use in controlling breeding of this species.

Construction and Use of the Fly Trap Stand. Maj. H. B. McMurdo, Medical Corps, U. S. Army. *Military Surgeon*, Vol. 60, No. 4, April, 1927, pp. 423–424. (Abstract by J. L. Robertson.)

This fly-trap stand is constructed of three 1-inch boards nailed together at right angles forming two sides and a flooring. The floor board is 4 inches from ground, with 2 by 4 inch block nailed to free angle to supply third leg. The advantages of the stand are noted: (1) Sharp angle pointed to windward provides sheltered and comfortable landing place; (2) bait protected from sand and dirt, remains in better condition; (3) trap protected from breakage; (4) trap becomes an entity inviting attention; (5) trap movable, still retaining stand advantages; (6) lower portion of trap slightly shaded, leaving upper portion lighter by contrast; (7) stand appears to increase in value after few days use, probably because the boards absorb to some degree odors from bait.

Tests have shown traps with stands more efficient than traps without stands.

Effects on Mosquito Larvæ of a Queensland Nitelia. E. W. I. Buhot, an inspector of Queensland Department of Public Health. Proceedings of the Royal Society of Queensland, Vol. 38, No. 6, September, 1926. From *Health*, Commonwealth of Australia, Vol. 5, No. 1, January, 1927, pp. 24–25.

"Mr. Buhot notes the previous work of Cabellero, of Spain (1919), Blow of Madagascar (1924), and the negative findings of McGregor (1924) in connection with the effects of various species of Characeae on mosquito larvæ. The results are given of experiments carried out at Brisbane with a fresh-water plant obtained locally from various creeks, and provisionally named *Nitella phaulotcles* by Groves. This plant grows prolifically beneath the surface in either running or stagnant water, reproduces freely, and is easily transplanted. Grown in an aquarium, it caused a green surface scum and a thin oil-like film on the water. In the aquarium in which this *Nitella* was growing, larvæ of *Culex quinquefasciatus* (*C. fatigans*) were killed. When mosquitoes were kept in cages over this aquarium no eggs were laid on the water by *Aëdes argenteus* (*Stegomyia fasciatus*), *Culex quinquefasciatus*, or *Anopheles nyssorhynchus*. Female mosquitoes were continually found dead on the surface of the water. In control aquaria, without *Nitella* but with other water plants, over which these mosquitoes were similarly caged, eggs were freely laid on the water.

"Whatever properties are imparted to the water by this *Nitella*, the water is not poisonous to animals or man. Rats given only this water to drink were not affected, and, after being killed, showed healthy internal organs on examination. Fish and water slugs thrived in the water. Two glasses of water were drunk daily by Mr. Buhot from the aquarium over a period of two months. Mr. Buhot's conclusions are that the introduction of this plant should prove of great

utility in eliminating mosquito breeding from ornamental ponds and from swamps and lagoons."

Philadelphia's Yellow Fever Epidemic—an Historical Sketch. W. L. Stevenson, Chief Engineer, Pennsylvania State Health Department. *The Listening Post*, Pennsylvania State Dept. of Health, Vol. 5, No. 2, March–April, 1927, pp. 11–18. (Abstract by W. A. Hardenbergh.)

In 1793 Philadelphia was rich, the metropolis and the capital of the United States, with a population of 50,000. Trade from all over the world came to its docks. Yellow fever had appeared in the West Indies in the early summer, and, inevitably, it was brought to Philadelphia. The first cases appeared in July; by the latter part of August it had reached epidemic form, and Thomas Miflin, the governor, wrote to Doctor Falconer, health officer, asking for facts as to the progress of the disease, its cause, and methods of correction. After conference with Dr. Benjamin Rush, the health officer ascribed the disease to a pile of rotting coffee. The College of Physicians issued a report recommending the avoidance of unnecessary intercourse, the marking of infected houses, cleanliness and fresh air, the avoidance of fatigue and intemperance, and the use of gunpowder, camphor, and vinegar. One-third of the people in the city fled, but the deaths increased. By early October there were 120 funerals per day, but by November 14 the health of the city was again normal, as would be expected from our present knowledge of the disease. In fact, this epidemic, in which 4,031 people died, was so typical that, knowing the cause and methods of spread, we can chart the progress of the disease without the reports. The article presents a fine story of heroism and unselfishness, while bringing forcefully to our mind the great advances in sanitation in the 134 years since that epidemic occurred.

Fourth Annual Report of Provincial Bureau of Health of the Province of Quebec, 1925-1926. Report of the Engineer, Chief of Division of Sanitary Engineering, pp. 125–129. (Abstract by S. D. Collins.)

Filtration and chlorination plants in the Province of Quebec are controlled by the Provincial Health Bureau by repeated visits and frequent water tests. The results are good, but certain operators neglect simple repairs and, in general, are not sufficiently interested in keeping the plants in order. To remedy this situation it is suggested that the provincial bureau examine operators of filtration and chlorination plants and issue a certificate of competency to operators who evidence the knowledge required and understand the responsibility entailed in their work, thus building up a class of qualified operators. Membership in this class would be sought by every filter operator.

These inspections also revealed that many country wells give unsatisfactory results upon examination, because they are not protected from surface wash. Cementing the first 6 or 8 feet of the walls of the wells, to prevent surface water from entering the well before being effectively filtered by passage through the soil, would usually suffice.

Many villages or parts of parishes still take their water supply from rivers without previous treatment. These waters are dangerous, because rivers constitute natural sewers for the farms and communities on their watersheds. Epidemics of typhoid fever are now limited to these small centers, the more important municipalities being protected by filtration or chlorination of their supplies.

The filtration plants in these small places would often cost more than the waterworks, and the water companies are not ready to incur an expense which would necessitate a very considerable increase in the water rates. Because these small polluted water supplies constitute sources of infection for the whole population, particularly since automobile touring has become so general, the Government in some cases assists in the improvement of small water supplies.

Ultra-violet Rays as Test of Water Purity. Anon. *Public Works*, Vol. 58, No. 2, February, 1927, p. 60. (Abstract by E. C. Sullivan.)

Messrs. Duclaux and Jeantet, in a communication to the Académie des Sciences, have suggested that the transparency of pure water to ultra-violet rays may be used as an index of its potability. They state that chemically pure water for lengths of 10 cm. is transparent to wave lengths as small as 1,900 A., i. e., well down in the ultra-violet.

"It is remarkable that all the substances ordinarily found in what is called pure water—that is to say, mineral salts—fail to diminish sensibly this transparency, provided that their concentration does not exceed that usually occurring in springs. On the other hand, substances under suspicion that water may contain render it opaque, and, in general, the more so the more serious or the more recent the contamination which they betray."

Algae Growth Control in Impounding Reservoirs. A. B. Cameron. Water Works Issue, *Engineering and Contracting*, Vol. 65, No. 12, December, 1926, pp. 618–620. (Abstract by C. C. Ruchhoft.)

Dosing the impounding reservoirs once or twice each summer month with from 0.25 to 0.40 p.p.m. of $CuSO_4$ was effective in preventing short filter runs, use of excessive wash water, and bad tastes at Bucyrus, Ohio. The necessity for dosing the reservoirs was determined by the noting of littoral organisms in the plant, length of filter run, and frequent microscopical examination.

A New Water-Sterilizing Process. Anon. *The Engineer*, Vol. 143, No. 3712, March 4, 1927, pp. 234, 235. (Abstract by Arthur P. Miller.)

The Bunau-Varilla method of sterilizing water with chlorine is now claiming much attention in France. Its inventor first used his scheme during the war at Verdun, and later studied it further. Apparatus of his design is now reported as being successfully used at Rheims, Carcassone, and a few other places.

Bunau-Varilla reported effective sterilization with as small a dose of chlorine as 3.2 ounces per million gallons. This caused him to think the action was physical and not chemical and his studies made him finally conclude that sterilization was due to ultra-violet or other similar rays. One proof of the ultra-violet ray theory is that the water after sterilization by his process assumes a radio active quality which is of sufficient proportions to kill bacteria introduced into the treated water.

A brief description of his apparatus follows: From the suction side of the pump, a tube, A, is taken off and leads to the bottom of a receptacle, B, holding 50 liters of chlorine solution. B receptacle is hermetically closed except for a tube of small diameter which is open at the top to the atmosphere and which goes down in the receptable almost to the bottom. In tube A there are two jets or nozzles, C and D, the first of which has a tapering restricted orifice of 5/10 mm. and the second, D, 8/10 mm. in diameter. Tube A has a branch which leads to a control tank, E, and just above the point of branching, a further tube, F, of smaller diameter, is sealed inside of A. Where this sealing is done, tube A is glass. The orifice of this latter tube, F, points downward and reaches well below the branch leading to control tank, E. This tube F the inventor terms "Bifurcateur Trompe," and it is, in effect, an ejector.

From the delivery side of the pump, pipe G, controlled by valve H, leads to control tank, E. Valve H is operated by a chain from the spindle of the stop valve of the engine driving the pump. When the pump is not running, H is closed and no water goes to control tank, E, but H opens as soon as steam is given to the pump. The delivery of the pipe G is in excess of the water which the drain tube from control tank, E, can carry away, and, therefore, the level in the control tank rises until the overflow level is reached, with the result that the outlet from the control tank leading to the "Bifurcateur Trompe" is submerged. At

each pump suction stroke water is drawn from the control tank into tube A and at the same time a minute dose of chlorine solution is drawn from receptacle B through orifices C and D and "Bifurcateur Trompe" F into the tube A and thence into the body of water going into the pump. To avoid a stoppage of orifices C and D, there is a small funnel arrangement on tube A and above them which permits the introduction of a small amount of hydrochloric acid.

What Chicago has done to end big cross-connection problem. Arthur E. Gorman. *Water Works Engineering*, Vol. 80, No. 7, March 30, 1927, p. 404. (Abstract by F. C. Dugan.)

In two years nearly 500 illegal connections with the city water supply system were found and a wide diversity of solution was met with. The success of this campaign resulted from the man-to-man policy of the Chicago Department of Health and from common-sense methods applied to securing remedies.

Chlorinating Operations at Ashokan Headworks. William W. Brush, Chief Engineer, Department of Water Supply, New York City. *Water Works Magazine*, Vol. 66, No. 4, April, 1927, pp. 130–133. (Abstract by H. B. Hommon.)

The New York department of water supply has been using 1-ton containers of liquid chlorine for two years. Special cars were designed to carry 15 cylinders, each weighing 3,400 pounds. It is stated that by using the 1-ton cylinders and special cars the freight rates are reduced, since with the large containers no freight either way is charged for them or the special cars; whereas with the 150-pound cylinders, freight has to be paid both ways on the containers. The saving in freight is 1½ cents per pound of chlorine. The total saving per year with an average chlorine consumption of 1,000 pounds per day was $8,700.

It is claimed that there is less danger in handling the 1-ton containers than the 150-pound cylinders, and that with suitable equipment the large containers can be handled as easily as the small cylinders.

Other advantages claimed for the 1-ton containers are (1) less cost for repairs for small valves and tubing; (2) less tare weight per ton of chlorine; (3) greater ease and simplicity in making connections to chlorine machines, one man being able to make complete change of large containers in six and one-half minutes; and (4) more uniform rate of discharge.

The Clarification of Colored Waters. Lewis B. Miller, Chemist, Hygienic Laboratory, U. S. Public Health Service. *Water Works Magazine*, Vol. 66, No. 4, April, 1927, pp. 150–152. (Abstract by H. B. Hommon.)

A number of samples of water containing "color" of the humic-acid type from different sources were studied in detail by (1) dialysis, (2) cataphoresis, and (3) by the effects of various chemical reagents upon the stability of the "color" in solution.

In the conclusions it is stated that the studies made with small samples in the laboratory suggest that the coagulating power of the trivalent aluminum ion acting upon the negatively charged colloid "color" is the important factor. It causes the formation of what may be called a "color floc." "Alum floc," which is so important in clarification, plays an unimportant rôle.

Concerning the practical application of the results of the studies to color removal at filtration plants, it is stated that, "considering the probable differences in the coloring matter itself in different natural waters and the infinity of possible variations among the other components of the waters, it became evident early in this work that no detailed procedure could be advanced for treatment of colored waters in waterworks practice from a laboratory study of them. An investigation with such an object in view must be conducted in the field over a long period of time and under a wide variety of conditions."

What Water Men Should Know Concerning Well Water Supplies. Paul S. Fox, *Water Works Engineering*, Vol. 80, No. 8, April 13, 1927, p. 508. (Abstract by Frank Raab.)

Hardness in water is the result of high CO_2 which dissolves calcium and magnesium from limestone encountered. The amount of hardness depends upon the acidity of the water and the character of the limestone. Calcium and magnesium carbonates and bicarbonates cause temporary hardness, while calcium and magnesium sulphates cause permanent hardness.

Pumps should be installed on a pump-room floor which is higher than the surrounding level of the ground. Wherever pumps have to be installed in pits, the walls of the pits should be constructed of water-tight material. Well pits should be provided with sumps which can be drained; but under no condition should these drains be connected with sanitary sewers. Pits may be provided with pumps or ejectors for removing seepage or waste water.

The curbing or casing of a well should be higher than the surrounding ground level and should be graded so that the drainage is away from the well. There should be a water-tight connection between the pump and the casing. No pumping equipment which requires the care of the attendant should be installed so that it can not receive attention.

Do not permit a connection between a pump pit or a subground level pump pit which is subject to back flow. Provide water-tight connections on cased wells to close annular openings between well casing and suction pipe. Provide a water-tight top for bored and dug wells. Properly locate and protect the air inlet for air-lift pumping systems.

A water-tight casing should be installed around the well pit and it should extend deep enough to prevent entrance into the pit of contaminated surface water or shallow ground water. The bottom of this casing should be effectively sealed into a solid formation and should be tested so as to make sure that it excludes contaminated water.

Screw-joint steel or wrought-iron pipe is the standard well casing for drilled wells, and it should be installed water-tight when new. Care should be taken that the bottom of each size of casing is effectively sealed so as to exclude all water which may collect around the outside of the pipe. The outside well casing should not be used either as a suction or a discharge pipe because frequently the water is corrosive and as a result the life of the casing is shortened.

Prevent all surface pollution and, if necessary, exclude from the well all waters other than those from the strata which supplies the well.

DEATHS DURING WEEK ENDED JUNE 18, 1927

Summary of information received by telegraph from industrial insurance companies for week ended, June 18, 1927, and corresponding week of 1926. (From the Weekly Health Index, June 22, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended June 18, 1927	Corresponding week 1926
Policies in force	62, 918, 546	64, 764, 403
Number of death claims	11, 891	12, 166
Death claims per 1,000 policies in force, annual rate	9. 9	9. 8

Deaths from all causes in certain large cities of the United States during the week ended June 18, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, June 22, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended June 18, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended June 18, 1927 [2]
	Total deaths	Death rate [1]		Week ended June 18, 1927	Corresponding week 1926	
Total (65 cities)	6,495	11.6	[3] 11.8	710	[3] 751	[4] 59
Akron	27			3	3	32
Albany [5]	25	10.9	14.5	3	2	63
Atlanta	63			11	14	
White	31			7	9	
Colored	32	(6)		4	5	
Baltimore [5]	192	12.2	12.4	22	24	68
White	135		11.4	13	16	50
Colored	57	(6)	18.4	9	8	140
Birmingham	62	15.0	14.6	8	8	
White	28		10.6	4	3	
Colored	34	(6)	20.7	4	5	
Boston	215	14.1	11.7	36	21	101
Bridgeport	21			1	2	19
Buffalo	132	12.5	12.8	17	23	71
Cambridge	21	8.8	8.5	1	5	18
Camden	31	12.2	7.2	1	3	17
Canton	26	12.0	8.1	4	3	95
Chicago [5]	671	11.3	11.7	77	81	67
Cincinnati	111	14.0	16.2	8	13	50
Cleveland	189	10.0	10.7	13	19	34
Columbus	67	12.0	12.6	3	5	28
Dallas	39	9.7	12.3	8	8	
White	31		10.7	6	5	
Colored	8	(6)	23.2	2	3	
Dayton	41	11.9	13.8	1	2	16
Denver	86	15.5	9.1	7	6	
Des Moines	34	11.9	12.5	7	2	117
Detroit	275	10.7	12.4	51	52	81
Duluth	19	8.6	14.8	1	5	22
El Paso	32	14.6	12.4	3	6	
Erie	32			2	4	39
Fall River [5]	26	10.2	12.7	2	4	35
Flint	27	9.8	6.9	6	2	98
Fort Worth	32	10.2	5.6	5	5	
White	25		4.5	3	4	
Colored	7	(6)	13.7	2	1	
Grand Rapids	31	10.2	9.0	1	5	15
Houston	40			3	3	
White	27			2	2	
Colored	13	(6)		1	1	
Indianapolis	86	12.0	15.3	4	14	31
White	62		14.0	1	12	9
Colored	24	(6)	24.9	3	2	183
Jersey City	70	11.3	8.0	8	5	60
Kansas City, Kans	34	15.2	13.4	4	2	78
White	29		9.7	3	1	67
Colored	5	(6)	30.5	1	1	152
Kansas City, Mo	79	10.8	11.8	6	10	
Knoxville	22	11.2		3		
White	17			3		
Colored	5	(6)		0		
Los Angeles	267			21	17	60
Louisville	59	9.6	12.1	1	3	9
White	39		10.5	1	3	10
Colored	20	(6)	21.1	0	0	0
Lowell	29	13.7	12.3	4	0	77
Lynn	11	5.5	14.5	1	3	26
Memphis	65	18.9	18.9	9	8	
White	34		14.6	4	7	
Colored	31	(6)	26.5	5	1	
Milwaukee	88	8.6	11.9	12	10	56
Minneapolis	96	11.3	12.1	9	15	51
Nashville [5]	44	16.6	15.2	4	8	
White	26		11.2	2	6	
Colored	18	(6)	25.4	2	2	
New Bedford	14	6.1	7.9	2	4	35
New Haven	34	9.6	9.2	2	7	28

(Footnotes at end of table)

Deaths from all causes in certain large cities of the United States during the week ended June 18, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926—Continued

City	Week ended June 18, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended June 18, 1927 [2]
	Total deaths	Death rate [1]		Week ended June 18, 1927	Corresponding week 1926	
New Orleans	151	18.6	17.3	30	18	--------
White	87	--------	13.5	15	8	--------
Colored	64	(6)	28.2	15	10	--------
New York	1,301	11.4	11.2	146	143	60
Bronx Borough	156	8.8	9.6	13	11	41
Brooklyn Borough	437	10.0	9.4	60	54	62
Manhattan Borough	524	15.1	15.5	56	59	66
Queens Borough	139	9.0	7.7	13	16	56
Richmond Borough	45	16.0	13.5	4	3	74
Newark, N. J	111	12.4	9.9	15	12	74
Oakland	46	9.0	10.0	5	3	59
Oklahoma City	28	--------	--------	2	2	--------
Omaha	55	13.1	10.1	6	3	67
Paterson	34	12.3	10.2	6	3	106
Philadelphia	444	11.4	11.2	41	35	55
Pittsburgh	164	13.3	13.3	17	17	59
Portland, Oreg	50	--------	--------	2	2	21
Providence	48	8.9	11.8	4	7	34
Richmond	49	13.3	14.6	3	8	40
White	25	--------	10.5	1	5	20
Colored	24	(6)	24.6	2	3	76
Rochester	69	11.1	10.1	12	3	101
St. Louis	196	12.2	11.6	16	12	--------
St. Paul	39	8.1	10.7	2	5	18
Salt Lake City [5]	28	10.7	12.9	1	2	15
San Antonio	46	11.4	17.0	4	22	--------
San Diego	29	13.1	16.1	5	2	106
San Francisco	150	13.6	15.0	8	9	50
Seattle	63	--------	--------	9	1	94
Somerville	12	6.1	8.9	0	1	0
Spokane	30	14.4	8.6	1	2	25
Springfield, Mass	28	9.9	9.7	4	4	62
Syracuse	51	13.5	10.1	6	6	77
Tacoma	23	11.2	7.9	1	3	24
Trenton	38	14.5	11.3	3	5	52
Washington, D. C	126	12.2	14.1	7	19	40
White	74	--------	11.5	0	11	0
Colored	52	(6)	21.8	7	8	129
Waterbury	21	--------	--------	2	4	47
Wilmington, Del	18	7.4	10.1	0	3	0
Worcester	82	13.9	14.9	6	3	72
Yonkers	21	9.2	10.8	3	3	68
Youngstown	21	6.5	9.5	4	5	56

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 64 cities.
[4] Data for 60 cities.
[5] Deaths for week ended Friday, June 17, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended June 25, 1927

DIPHTHERIA

	Cases
Alabama	11
Arizona	1
Arkansas	4
California	98
Colorado	12
Connecticut	34
Delaware	2
Florida	7
Georgia	10
Idaho	1
Illinois	112
Indiana	22
Kansas	14
Louisiana	12
Maine	2
Maryland [1]	52
Massachusetts	84
Michigan	88
Minnesota	12
Mississippi	3
Missouri [2]	18
Montana	4
Nebraska	12
New Jersey	91
New Mexico	3
New York [3]	72
North Carolina	5
Oklahoma [4]	8
Oregon	10
Pennsylvania	149
Rhode Island	15
South Carolina	6
South Dakota	1
Tennessee	3
Texas	17
Utah [1]	7
Vermont	2
Washington	6
West Virginia	17
Wisconsin	32

INFLUENZA

	Cases
Alabama	7
Arkansas	17
California	12
Georgia	13
Illinois	6
Indiana	2
Kansas	2
Louisiana	16
Maine	3
Massachusetts	9
Michigan	1
Minnesota	2
New Jersey	3
Oklahoma [4]	37
Oregon	4
South Carolina	150
Tennessee	10
Texas	19
West Virginia	8
Wisconsin	25

MEASLES

	Cases
Alabama	142
Arkansas	73
California	402
Colorado	54
Connecticut	68
Delaware	6
Florida	36
Georgia	27
Idaho	6
Illinois	416
Indiana	68
Kansas	257
Louisiana	67
Maine	55
Maryland [1]	14
Massachusetts	351
Michigan	106
Minnesota	62

[1] Week ended Friday.

[2] Exclusive of Kansas City.

[3] Exclusive of New York City.

[4] Exclusive of Oklahoma City and Tulsa.

MEASLES—continued

	Cases
Missouri [2]	58
Montana	9
Nebraska	60
New Jersey	38
New Mexico	31
New York [3]	730
North Carolina	759
Oklahoma [4]	255
Oregon	115
Pennsylvania	449
Rhode Island	2
South Carolina	269
South Dakota	6
Tennessee	17
Texas	80
Utah [1]	11
Vermont	39
Washington	371
West Virginia	145
Wisconsin	710
Wyoming	36

MENINGOCOCCUS MENINGITIS

California	2
Florida	2
Georgia	1
Illinois	8
Kansas	1
Michigan	2
Minnesota	2
Montana	2
New Jersey	3
New York [3]	2
North Carolina	1
Oregon	2
Pennsylvania	2
Tennessee	1
Washington	4
Wisconsin	4

POLIOMYELITIS

Alabama	3
Arizona	1
Arkansas	1
California	24
Florida	2
Georgia	1
Illinois	1
Indiana	1
Kansas	1
Louisiana	1
Massachusetts	3
Michigan	1
Minnesota	1
New Jersey	3
New Mexico	1
New York [3]	2
Oklahoma [4]	3
South Carolina	5
Tennessee	4
Texas	4
Wisconsin	2

SCARLET FEVER

	Cases
Alabama	12
Arizona	1
Arkansas	1
California	108
Colorado	60
Connecticut	48
Florida	4
Georgia	12
Idaho	3
Illinois	205
Indiana	48
Kansas	38
Louisiana	4
Maine	19
Maryland [1]	33
Massachusetts	362
Michigan	214
Minnesota	98
Mississippi	2
Missouri [2]	27
Montana	8
Nebraska	8
New Jersey	202
New Mexico	5
New York [3]	179
North Carolina	13
Oklahoma [4]	8
Oregon	8
Pennsylvania	305
Rhode Island	18
South Carolina	3
South Dakota	11
Tennessee	6
Texas	6
Utah [1]	8
Vermont	2
Washington	42
West Virginia	25
Wisconsin	76
Wyoming	13

SMALLPOX

Alabama	6
Arkansas	1
California	8
Colorado	2
Florida	12
Georgia	6
Idaho	9
Illinois	25
Indiana	96
Kansas	20
Louisiana	4
Michigan	32
Minnesota	1
Mississippi	1
Missouri [2]	27
Montana	14
Nebraska	6
New York [3]	4
North Carolina	25
Oklahoma [4]	59

[1] Week ended Friday.
[2] Exclusive of Kansas City.
[3] Exclusive of New York City.
[4] Exclusive of Oklahoma City and Tulsa.

SMALLPOX—continued

	Cases
Oregon	17
Pennsylvania	1
South Carolina	3
South Dakota	9
Tennessee	4
Texas	10
Utah [1]	3
Washington	26
West Virginia	28
Wisconsin	10
Wyoming	1

TYPHOID FEVER

	Cases
Alabama	69
Arizona	1
Arkansas	30
California	16
Colorado	3
Delaware	1
Florida	4
Georgia	49
Idaho	1
Illinois	19
Indiana	7
Kansas	4

TYPHOID FEVER—continued

	Cases
Louisiana	26
Maine	1
Maryland [1]	11
Massachusetts	4
Michigan	5
Minnesota	8
Mississippi	30
Missouri [2]	10
Montana	2
Nebraska	4
New Jersey	1
New Mexico	4
New York [3]	13
North Carolina	52
Oklahoma [4]	47
Oregon	5
Pennsylvania	14
South Carolina	97
South Dakota	1
Tennessee	82
Texas	33
Washington	3
West Virginia	14
Wisconsin	3

[1] Week ended Friday,
[2] Exclusive of Kansas City.
[3] Exclusive of New York City.
[4] Exclusive of Oklahoma City and Tulsa.

Reports for week ended June 18, 1927

DIPHTHERIA

	Cases
District of Columbia	17
North Dakota	4

INFLUENZA

	Cases
District of Columbia	1

MEASLES

	Cases
District of Columbia	2
North Dakota	26

POLIOMYELITIS

	Cases
North Dakota	1

SCARLET FEVER

	Cases
District of Columbia	12
North Dakota	19

SMALLPOX

	Cases
District of Columbia	12

TYPHOID FEVER

	Cases
District of Columbia	2

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Cerebrospinal meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
April, 1927										
Maryland [1]		181	270	2	116		0	285	0	48
May, 1927										
Illinois	32	466	174	16	4,562		5	1,043	150	52
Iowa	2	84			1,282		1	125	39	4
Maine	2	27	35		410		0	146	0	4
Maryland	2	197	68		119		0	266	0	25
Michigan		368	17	1	1,177		0	1,100	187	24
Minnesota	11	140	13		611		3	758	6	13
New York	30	2,042		13	3,889		8	3,943	41	70
Ohio	5	470	35		870		0	1,279	204	48
Rhode Island	1	46	4		16		1	77	0	1
West Virginia	1	44	35		638		0	137	116	32
Wisconsin	38	125	183		2,954		4	589	147	13
Wyoming	1	5	3		467		0	90	13	

[1] Corrected report.

April, 1927

	Cases
Maryland:	
Chicken pox	438
Dysentery	4
German measles	10
Impetigo contagiosa	3
Mumps	133
Rabies in animals	11
Septic sore throat	13
Vincent's angina	5
Whooping cough	367

May, 1927

	Cases
Anthrax:	
New York	2
Chicken pox:	
Illinois	1,058
Iowa	111
Maine	55
Maryland	382
Michigan	1,175
Minnesota	735
New York	2,426
Ohio	1,551
Rhode Island	59
West Virginia	100
Wisconsin	913
Wyoming	34
Conjunctivitis:	
Maine	1
Dysentery.	
Illinois	36
Maryland	2
Minnesota	5
New York	5
German measles:	
Illinois	166
Maine	165
Maryland	37
New York	1,248
Ohio	585
Rhode Island	8
Wisconsin	157
Wyoming	65
Impetigo contagiosa:	
Maryland	1
Lead poisoning:	
Illinois	12
Ohio	13
Leprosy:	
Minnesota	1
Lethargic encephalitis:	
Illinois	14
Maryland	1
Michigan	2
Minnesota	2
New York	35
Ohio	6
Wisconsin	1
Mumps:	
Illinois	2,085
Iowa	146
Maine	37
Maryland	184
Michigan	1,140
New York	2,711

May, 1927—Continued

	Cases
Mumps—Continued.	
Ohio	749
Rhode Island	27
Wisconsin	1,257
Wyoming	2
Ophthalmia neonatorum:	
Illinois	35
New York	2
Ohio	101
Rhode Island	1
Paratyphoid fever:	
Maine	4
New York	2
Puerperal septicemia:	
Illinois	8
New York	13
Rabies in animals:	
Maryland	8
New York	46
Rabies in man:	
Michigan	2
New York	1
Rocky Mountain spotted or tick fever:	
Wyoming	30
Scabies.	
Maryland	1
Septic sore throat.	
Illinois	10
Maine	1
Maryland	11
Michigan	26
New York	19
Ohio	73
Rhode Island	1
Tetanus.	
Illinois	5
Maryland	1
New York	6
Trachoma:	
Illinois	5
Ohio	6
Tularaemia:	
Wyoming	3
Typhus fever:	
New York	2
Vincent's angina.	
Illinois	2
Maine	7
Maryland	2
New York	75
Whooping cough:	
Illinois	906
Iowa	90
Maine	125
Maryland	303
Michigan	759
Minnesota	100
New York	1,178
Ohio	736
Rhode Island	8
West Virginia	216
Wisconsin	516
Wyoming	12

RECIPROCAL NOTIFICATIONS

Notifications regarding communicable diseases sent during the month of May, 1927, to other State health departments by departments of health of certain States

Disease	Referred by—					
	California	Connecticut	Illinois	Minnesota	New York	Washington
Diphtheria			1			
Dysentery				2		
German measles					1	
Leprosy				1		
Malaria				1		
Malta fever				1		
Measles		1			1	
Paratyphoid fever			1			
Rocky Mountain spotted fever						1
Scarlet fever		1		2	2	
Smallpox			3		2	
Tuberculosis	2			75		
Typhoid fever			2	3	3	

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 100 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,900,000. The estimated population of the 94 cities reporting deaths is more than 30,260,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended June 11, 1927, and June 12, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
41 States	1,493	1,256	
100 cities	960	792	767
Measles.			
40 States	8,816	16,698	
100 cities	2,529	5,427	
Poliomyelitis.			
42 States	30	20	
Scarlet fever			
41 States	3,044	3,187	
100 cities	1,428	1,519	836
Smallpox.			
42 States	606	524	
100 cities	120	96	108
Typhoid fever.			
41 States	466	326	
100 cities	60	71	81
Deaths reported			
Influenza and pneumonia.			
94 cities	577	598	
Smallpox:			
94 cities	0	2	
Omaha	0	2	

City reports for week ended June 11, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during non-epidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	2	1	1	0	0	5	0	0
New Hampshire:									
Concord	22,546	0	0	0	0	0	5	0	3
Manchester	83,097	0	1	0	0	0	1	0	2
Vermont:									
Barre	10,008	1	0	0	0	0	0	0	0
Massachusetts:									
Boston	779,620	56	46	39	0	0	152	56	19
Fall River	128,993	8	3	1	0	0	10	0	1
Springfield	142,065	7	2	8	0	0	2	8	0
Worcester	190,757	24	3	0	0	0	0	6	5
Rhode Island:									
Pawtucket	69,760	2	0	0	0	0	0	0	2
Providence	267,918	0	6	0	0	0	1	0	4
Connecticut:									
Bridgeport	(1)	0	5	7	1	0	4	2	0
Hartford	160,197	3	5	1	0	0	5	13	2
New Haven	178,927	16	1	0	0	0	13	4	2
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	6	8	12		0	12	11	15
New York	5,873,356	220	216	357	15	5	68	241	123
Rochester	316,786	9	9	17		0	21	13	2
Syracuse	182,003	33	4	0		0	234	14	4
New Jersey:									
Camden	128,642	8	5	15	1	1	5	2	3
Newark	452,513	96	12	13	0	0	9	104	7
Trenton	132,020	0	3	3	0	0	0	1	2
Pennsylvania:									
Philadelphia	1,979,364	97	58	60		2	65	145	48
Pittsburgh	631,563	53	14	24		2	116	8	22
Reading	112,707	6	2	1		0	76	13	1
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	7	7	4	0	0	4	5	3
Cleveland	936,485	78	18	50	2	1	4	91	14
Columbus	279,836	8	2	6	0	0	0	0	6
Toledo	287,380	96	4	3	1	1	28	3	5
Indiana:									
Fort Wayne	97,846	1	2	8	0	0	9	0	3
Indianapolis	358,819	11	3	3	0	0	11	68	9
South Bend	80,091	1	1	1	0	0	3	0	1
Terre Haute	71,071	0	1	0	0	0	3	0	2
Illinois:									
Chicago	2,995,239	83	75	60	4	0	116	140	61
Springfield	63,923	0	1	1	0	0	0	1	1
Michigan:									
Detroit	1,245,824	63	43	34	3	4	9	130	22
Flint	130,316	8	2	2	0	0	26	0	4
Grand Rapids	153,698	4	2	0	0	1	27	1	2

[1] No estimate made.

City reports for week ended June 11, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria: Cases, estimated expectancy	Diphtheria: Cases reported	Influenza: Cases reported	Influenza: Deaths reported	Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
EAST NORTH CENTRAL—continued									
Wisconsin:									
Kenosha	50,891	15	1	0	0	0	2	41	1
Milwaukee	509,192	74	11	13	0	0	226	126	9
Racine	67,707	15	0	6	0	0	1	22	0
Superior	39,671	0	1	0	0	0	2	0	1
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	14	0	0	0	0	7	0	0
Minneapolis	425,435	130	13	9	0	1	5	0	8
St. Paul	246,001	45	12	7	0	0	19	1	3
Iowa:									
Davenport	52,469	3	1	0	0	....	0	1	....
Des Moines	141,441	0	1	0	0	....	0	0	....
Sioux City	76,411	4	0	0	0	....	32	1	....
Waterloo	36,771	0	0	1	0	....	1	1	....
Missouri:									
Kansas City	367,481	16	4	1	0	1	28	6	3
St. Joseph	78,342	0	0	0	0	0	11	0	3
St. Louis	821,543	14	35	20	0	0	13	64	....
North Dakota:									
Fargo	26,403	0	1	0	0	0	0	0	0
Grand Forks	14,811	1	0	0	0	....	0	0	....
South Dakota:									
Aberdeen	15,036	3	0	0	0	....	1	0	....
Sioux Falls	30,127	0	0	0	0	....	52	0	....
Nebraska:									
Lincoln	60,941	3	1	1	0	0	42	5	0
Omaha	211,768	6	2	2	0	0	9	6	4
Kansas:									
Topeka	55,411	4	1	0	0	0	36	0	0
Wichita	88,367	4	1	1	0	0	27	0	3
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	1	2	0	0	0	0	0	3
Maryland:									
Baltimore	796,296	79	16	47	1	2	3	14	11
Cumberland	33,741	0	0	0	0	0	0	1	1
Frederick	12,035	0	0	0	0	0	0	0	0
District of Columbia:									
Washington	497,906	11	8	13	0	0	3	0	4
Virginia:									
Lynchburg	30,395	2	0	1	0	0	14	0	1
Norfolk	(1)	10	0	1	0	0	74	4	3
Richmond	186,403	0	1	1	0	0	0	0	2
Roanoke	58,208	4	1	0	0	0	0	0	0
West Virginia:									
Charleston	49,019	0	0	0	0	1	5	0	0
Wheeling	56,208	2	1	0	0	0	4	0	3
North Carolina:									
Raleigh	30,371	1	0	0	0	0	71	0	1
Wilmington	37,061	1	0	0	0	0	70	5	2
Winston-Salem	69,031	2	0	0	0	0	149	11	2
South Carolina:									
Charleston	73,125	0	1	1	10	0	4	0	0
Columbia	41,225	1	0	0	0	....	23	2	3
Greenville	27,311	....	0	....	....	....	....	....	....
Georgia:									
Atlanta	(1)	2	1	1	8	1	14	7	2
Brunswick	16,809	0	0	0	0	0	0	19	0
Savannah	93,134	0	0	0	0	1	14	3	0
Florida:									
Miami	69,754	3	3	1	0	0	1	3	0
St. Petersburg	26,847	....	0	....	....	0	....	....	0
Tampa	94,743	0	0	8	0	0	17	0	1

[1] No estimates made.

City reports for week ended June 11, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	0	0	0	0	0	0	1
Louisville	305,935	1	3	1	1	0	1	11	6
Tennessee:									
Memphis	174,533	0	1	1	0	0	9	0	3
Nashville	136,220	2	0	1	0	0	0	0	4
Alabama:									
Birmingham	205,670	11	1	1	0	2	15	0	6
Mobile	65,955	0	1	0	0	0	4	0	2
Montgomery	46,481	0	0	0	0	0	2	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	0	1	0	0		4	1	
Little Rock	74,216	5	0	0	0	0	20	0	1
Louisiana:									
New Orleans	414,493	0	5	2	7	4	6	0	16
Shreveport	57,857	0	0	0	0	0	14	6	0
Oklahoma:									
Oklahoma City	[1]	3	1	0	0	0	18	0	6
Tulsa	124,478	0		0	0		2	0	
Texas:									
Dallas	194,450		2	3	0	0	47		0
Galveston	48,375	0	0	0	0	0	0	0	0
Houston	164,954	2	2	2	0	0	7	1	1
San Antonio	198,069	0	1	4	0	2	3	0	6
MOUNTAIN									
Montana:									
Billings	17,971	4	0	0	0	1	0	0	1
Great Falls	29,883	4	0	0	0	0	6	3	0
Helena	12,037	0	0	0	0	0	0	0	3
Missoula	12,668	0	0	0	0	0	1	0	1
Idaho:									
Boise	23,042	1	0	0	0	0	0	0	0
Colorado:									
Denver	280,911	18	9	33		0	19	1	3
Pueblo	43,787	4	1	1	0	0	32	0	0
New Mexico:									
Albuquerque	21,000	0	0	0	0	0	9	1	0
Utah:									
Salt Lake City	130,948	42	3	7	0	0	5	1	2
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	[1]	24	5	0	0		231	22	
Spokane	108,897	10	2	2	0		1	0	
Tacoma	104,455	23	1	2	0	0	62	0	2
Oregon:									
Portland	282,383	7	5	2	0	0	107	2	3
California:									
Los Angeles	[1]	35	30	34	8	0	91	14	18
Sacramento	72,260	6	3	1	0	0	3	3	3
San Francisco	557,530	54	17	9	3	2	47	75	1

[1] No estimate made.

City reports for week ended June 11, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths all causes
NEW ENGLAND											
Maine:											
Portland	2	2	0	0	0	1	0	1	0	5	19
New Hampshire:											
Concord	1	0	0	0	0	0	0	0	0	0	15
Manchester	0	0	0	0	0	0	0	0	0	0	17
Vermont:											
Barre	1	0	0	0	0	0	0	0	0	0	2
Massachusetts:											
Boston	44	95	0	0	0	16	2	0	0	4	215
Fall River	2	6	0	0	0	3	1	0	0	0	33
Springfield	4	1	0	0	0	3	1	0	0	9	38
Worcester	6	6	0	0	0	2	1	0	0	11	59
Rhode Island:											
Pawtucket	1	2	0	0	0	2	0	0	0	2	15
Providence	5	6	0	0	0	3	0	0	0	0	53
Connecticut:											
Bridgeport	8	7	0	0	0	1	0	0	0	1	22
Hartford	2	12	0	0	0	1	0	1	1	6	26
New Haven	4	2	0	0	0	2	1	0	0	0	31
MIDDLE ATLANTIC											
New York:											
Buffalo	16	20	0	0	0	5	1	0	0	13	128
New York	161	403	0	0	0	[1] 107	11	0	1	133	1,092
Rochester	11	11	0	0	0	4	0	2	0	3	71
Syracuse	6	2	0	0	0	1	0	0	0	5	45
New Jersey:											
Camden	4	5	0	0	0	1	0	0	0	0	32
Newark	16	23	0	0	0	5	0	1	0	58	109
Trenton	2	1	0	0	0	6	0	0	0	1	43
Pennsylvania.											
Philadelphia	67	100	1	0	0	40	4	1	0	23	453
Pittsburgh	27	14	0	1	0	10	1	0	0	11	177
Reading	1	3	0	0	0	2	0	0	0	1	27
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	10	19	2	0	0	9	1	1	0	0	117
Cleveland	26	18	1	0	0	21	1	2	0	22	204
Columbus	6	12	2	1	0	3	0	0	0	16	77
Toledo	9	13	1	0	0	9	1	0	0	25	64
Indiana.											
Fort Wayne	2	3	1	1	0	0	0	0	0	7	40
Indianapolis	7	10	10	22	0	4	1	0	0	17	105
South Bend	2	2	1	1	0	1	0	0	0	2	12
Terre Haute	2	0	1	0	0	0	0	0	0	1	16
Illinois:											
Chicago	83	96	2	0	0	59	3	2	1	120	677
Springfield	1	4	0	3	0	0	0	0	0	0	21
Michigan:											
Detroit	57	108	2	0	0	29	3	1	1	73	272
Flint	4	22	0	0	0	0	0	0	0	0	17
Grand Rapids	5	14	0	3	0	1	1	2	0	7	35
Wisconsin:											
Kenosha	1	1	1	0	0	0	0	0	0	5	14
Milwaukee	16	56	2	0	0	4	0	1	0	18	101
Racine	4	1	1	0	0	0	0	0	0	6	10
Superior	2	4	2	0	0	2	0	0	0	0	15
WEST NORTH CENTRAL											
Minnesota:											
Duluth	5	19	2	0	0	2	0	0	0	2	14
Minneapolis	25	39	8	0	0	5	1	5	0	1	107
St. Paul	19	16	3	0	0	3	0	1	0	7	60

[1] Pulmonary tuberculosis only.

City reports for week ended June 11, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
WEST NORTH CENTRAL—continued											
Iowa:											
Davenport	0	0	4	0			0	0		0	
Des Moines	4	4	3	4		2	0	0		0	34
Sioux City	1	1	2	5			0	0		9	
Waterloo	1	1	0	0			0	0		1	
Missouri:											
Kansas City	5	3	0	3	0	9	1	0	0	22	137
St. Joseph	0	2	0	6	0	2	0	0	0	4	29
St. Louis	22	10	3	1	0	8	2	0	0	37	194
North Dakota:											
Fargo	1	1	0	0	0	0	0	0	0	0	
Grand Forks	1	0	0	0			0	0		0	
South Dakota:											
Aberdeen	3	2	0	0			0	0		0	
Sioux Falls	0	2	0	0			0	0		0	
Nebraska:											
Lincoln	1	2	1	0	0	0	0	0	0	2	11
Omaha	3	5	6	1	0	3	0	0	0	3	49
Kansas:											
Topeka	1	0	1	0	0	2	0	0	0		12
Wichita	1	1	3	0	0	1	1	1	0	16	25
SOUTH ATLANTIC											
Delaware:											
Wilmington	3	2	0	0	0	2	1	0	0	0	24
Maryland:											
Baltimore	23	21	1	0	0	16	3	1	0	55	191
Cumberland	0	0	0	0	0	0	0	0	0	0	7
Frederick	1	0	0	0	0	0	0	0	0	0	1
District of Columbia:											
Washington	15	21	2	2	0	17	2	1	0	8	134
Virginia:											
Lynchburg	0	0	1	0	0	0	0	0	0	1	7
Norfolk	1	7	0	0	0	1	1	0	0	5	
Richmond	2	2	0	0	0	2	1	0	0	2	64
Roanoke	0	0	1	0	0	1	0	0	0	5	7
West Virginia:											
Charleston	0	0	0	0	0	0	1	0	0	1	11
Wheeling	2	3	0	0	0	0	1	1	0	1	18
North Carolina:											
Raleigh	0	0	1	0	0	1	1	0	1	8	9
Wilmington	0	0	0	0	0	1	0	0	0	2	9
Winston-Salem	1	0	2	1	0	0	1	0	0	35	16
South Carolina:											
Charleston	0	0	0	3	0	3	1	0	0	2	34
Columbia	0	0	1	0			2	0		28	12
Greenville	0		0				1				
Georgia:											
Atlanta	3	3	4	3	0	7	1	5	0	17	67
Brunswick	0	0	0	1	0	1	1	0	0	1	4
Savannah	0	0	0	1	0	2	2	2	0	0	32
Florida:											
Miami	0	0		0	0	2	1	2	0	17	17
St. Petersburg	0		0		0	0	0		1		8
Tampa	0	1	0	0	0	0	1	0	0	0	24
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0	1	0	0	0	0	0	0	0	0	10
Louisville	5	8	1	6	0	3	1	0	0	18	75
Tennessee:											
Memphis	3	3	0	7	0	4	1	0	0	16	54
Nashville	2	0	1	0	0	8	2	1	0	1	47
Alabama:											
Birmingham	1	1	6	7	0	4	3	4	2	24	53
Mobile	0	0	1	0	0	3	1	3	0	2	25
Montgomery	0	0	1	1	0	0	1	0	0	5	

City reports for week ended June 11, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	0	0	0			0	4		4	
Little Rock	1	0	1	0	0	0	0	1	0	0	
Louisiana:											
New Orleans	3	3	1	0	0	18	3	1	0	8	146
Shreveport	0	0	1	1	0	1	0	1	0	0	17
Oklahoma:											
Oklahoma City	1	1	4	2	0	3	0	3	0	4	29
Tulsa		6		0				1		0	
Texas:											
Dallas	2	1	2	1	0	5	1	0	0		43
Galveston	0	0	0	0	0	2	0	0	0	0	16
Houston	0	3	1	0	0	5	2	0	0	0	56
San Antonio	0	1	0	0	0	5	2	1	1	1	53
MOUNTAIN											
Montana:											
Billings	1	1	1	0	0	1	0	0	0	4	8
Great Falls	1	1	1	0	0	0	0	0	0	0	11
Helena	1	1	0	0	0	0	0	0	0	0	6
Missoula	1	0	0	0	0	0	0	0	0	0	6
Idaho:											
Boise	0	0	1	0	0	0	0	0	0	1	4
Colorado:											
Denver	9	33	1	0	0	7	0	0	0	1	62
Pueblo	1	28	0	0	0	1	0	0	0	0	14
New Mexico:											
Albuquerque	0	1	0	0	0	2	0	0	0	0	8
Utah:											
Salt Lake City	2	16	1	3	0	2	1	0	0	25	27
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	5
PACIFIC											
Washington:											
Seattle	10	20	4	2			1	0		27	
Spokane	3	7	2	7			0	0		5	
Tacoma	2	3	3	19	0	2	1	0	0	8	27
Oregon:											
Portland	6	2	6	5	0	8	1	0	0	5	72
California:											
Los Angeles	19	23	6	0	0	23	2	3	0	11	245
Sacramento	1	2	0	6	0	3	0	3	0	0	24
San Francisco	12	23	1	1	0	6	1	2	2	32	131

Division, State, and city	Cerebrospinal meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
New Hampshire:									
Concord	0	0	1	1	0	0	0	0	0
Massachusetts:									
Boston	1	0	0	0	0	0	0	1	0
Fall River	0	0	0	1	0	0	1	0	0
Worcester	0	0	0	0	0	0	0	1	0
Connecticut:									
Bridgeport	0	0	1	0	0	0	0	0	0

City reports for week ended June 11, 1927—Continued

Division, State, and city	Cerebrospinal meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
MIDDLE ATLANTIC									
New York:									
New York	3	0	3	2	0	0	1	0	0
New Jersey:									
Newark	0	0	0	0	0	0	0	2	0
Trenton	1	0	0	1	0	0	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	0	2	0	0	0	0	0	0	0
Cleveland	2	1	1	0	0	0	0	0	0
Columbus	0	0	0	1	0	0	0	0	0
Illinois:									
Chicago	7	1	2	0	0	0	0	0	0
Michigan:									
Detroit	2	0	2	0	0	0	0	0	0
Wisconsin:									
Milwaukee	8	5	0	0	0	0	0	0	0
Racine	0	1	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Missouri:									
Kansas City	1	1	0	0	0	0	0	0	0
SOUTH ATLANTIC [1]									
Maryland:									
Baltimore	0	0	0	1	0	0	1	0	0
District of Columbia:									
Washington	0	0	1	1	0	0	0	0	0
Virginia:									
Richmond	0	0	0	0	0	1	0	0	0
North Carolina:									
Raleigh	1	0	0	0	0	1	0	0	0
South Carolina:									
Charleston [2]	0	0	0	0	1	1	0	0	0
Georgia:									
Atlanta	0	0	0	0	1	3	0	0	0
EAST SOUTH CENTRAL									
Tennessee:									
Memphis	1	1	0	0	0	0	0	0	0
Alabama:									
Birmingham	0	0	0	0	3	0	0	0	0
Mobile	0	0	0	0	0	2	0	0	0
Montgomery	0	0	0	0	1	0	0	0	0
WEST SOUTH CENTRAL									
Louisiana:									
New Orleans	0	0	0	0	3	3	0	1	0
Shreveport	0	0	0	0	0	2	0	0	0
Texas:									
Dallas	0	0	0	0	1	1	0	0	0
PACIFIC									
Washington:									
Spokane	1	-------	0	-------	0	-------	0	0	-------
Oregon:									
Portland	0	0	0	1	0	0	0	0	1
California:									
Los Angeles	0	0	0	0	0	0	0	2	0
San Francisco	0	1	0	0	0	0	0	0	0

[1] Typhus fever: 2 cases at Tampa, Fla.

[2] Dengue: 9 cases at Charleston, S. C.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended June 11, 1927, compared with those for a like period ended June 12, 1926. The population figures used in computing the rates are approximate estimates as of July 1,

1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, May 8 to June 11, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	May 15, 1926	May 14, 1927	May 22, 1926	May 21, 1927	May 29, 1926	May 28, 1927	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927
101 cities	120	175	118	174	122	171	117	158	130	[2] 162
New England	87	104	78	153	80	160	78	160	68	132
Middle Atlantic	135	282	138	268	145	234	135	235	156	248
East North Central	95	132	118	160	108	145	119	124	146	126
West North Central	202	136	147	105	165	91	210	81	234	81
South Atlantic	76	116	71	111	95	145	47	127	60	[2] 124
East South Central	52	82	36	36	41	97	16	61	26	20
West South Central	82	113	47	50	64	84	56	67	47	46
Mountain	182	99	128	108	128	144	109	180	128	369
Pacific	174	94	163	105	158	196	131	128	158	126

MEASLES CASE RATES

101 cities	1,525	604	1,393	622	1,266	550	1,005	448	930	[2] 426
New England	1,196	346	1,073	416	1,061	434	726	313	658	457
Middle Atlantic	1,200	298	1,135	324	957	366	752	282	708	299
East North Central	1,213	451	1,215	493	1,189	373	1,067	324	1,026	296
West North Central	4,181	935	3,465	955	3,086	655	2,231	461	2,051	373
South Atlantic	1,917	1,553	1,645	1,544	1,520	1,364	1,203	1,005	1,093	[2] 851
East South Central	3,449	346	2,969	357	2,368	321	1,655	382	1,391	158
West South Central	155	575	142	629	112	466	86	503	125	424
Mountain	1,394	1,304	1,385	908	1,303	1,052	1,249	620	921	566
Pacific	675	1,262	688	1,217	798	1,063	691	1,097	589	1,139

SCARLET FEVER CASE RATES

101 cities	326	340	308	310	274	295	230	220	260	[2] 241
New England	311	439	288	432	257	365	248	288	255	323
Middle Atlantic	249	475	256	416	212	364	209	256	195	287
East North Central	356	290	341	268	337	302	245	212	333	247
West North Central	871	320	720	288	700	240	419	236	627	195
South Atlantic	220	149	194	101	158	121	188	78	158	[2] 110
East South Central	202	153	176	132	171	138	124	102	78	66
West South Central	155	21	172	34	116	25	163	21	86	34
Mountain	246	728	173	989	100	809	219	782	118	719
Pacific	257	202	292	168	179	209	169	186	236	204

SMALLPOX CASE RATES

101 cities	26	21	18	26	19	29	15	22	16	[2] 20
New England	0	0	0	0	0	0	0	0	0	0
Middle Atlantic	0	0	0	0	1	0	0	0	0	0
East North Central	20	20	18	37	13	49	9	33	12	21
West North Central	36	26	28	48	44	42	40	24	28	32
South Atlantic	39	38	24	36	28	40	34	33	37	[2] 20
East South Central	119	56	62	76	62	61	83	92	52	107
West South Central	116	59	95	17	99	29	43	17	34	8
Mountain	55	9	18	45	36	27	27	36	46	27
Pacific	67	92	51	71	32	84	24	60	54	92

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.

[2] Greenville, S. C., not included.

Summary of weekly reports from cities, May 8 to June 11, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	May 15, 1926	May 14, 1927	May 22, 1926	May 21, 1927	May 29, 1926	May 28, 1927	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927
101 cities	8	8	11	10	10	9	9	13	12	[2] 11
New England	0	5	9	5	7	9	0	9	17	5
Middle Atlantic	10	5	7	6	5	6	9	5	6	6
East North Central	5	3	5	5	9	7	5	7	4	7
West North Central	2	2	8	6	4	4	8	12	6	14
South Atlantic	4	9	32	13	26	18	32	29	26	[2] 18
East South Central	0	66	10	56	31	31	10	61	57	41
West South Central	43	25	26	46	13	25	9	38	52	34
Mountain	9	9	9	9	0	18	9	9	9	0
Pacific	8	10	19	10	11	8	8	26	13	21

INFLUENZA DEATH RATES

	May 15, 1926	May 14, 1927	May 22, 1926	May 21, 1927	May 29, 1926	May 28, 1927	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927
95 cities	16	13	15	12	12	9	8	7	10	[2] 6
New England	5	14	12	14	9	9	2	2	12	0
Middle Atlantic	17	14	16	10	11	8	6	9	9	5
East North Central	18	11	18	12	11	4	8	4	10	4
West North Central	6	4	8	8	13	12	8	6	4	4
South Atlantic	17	24	11	11	11	13	8	17	6	[2] 9
East South Central	31	31	36	41	26	25	36	5	36	10
West South Central	26	13	22	26	9	26	13	17	18	26
Mountain	18	9	0	9	9	9	18	0	9	9
Pacific	4	7	4	0	11	3	4	3	0	7

PNEUMONIA DEATH RATES

	May 15, 1926	May 14, 1927	May 22, 1926	May 21, 1927	May 29, 1926	May 28, 1927	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927
95 cities	149	122	141	109	119	100	105	93	95	[2] 94
New England	165	144	144	100	123	144	116	116	101	88
Middle Atlantic	166	151	173	119	145	116	131	108	110	112
East North Central	146	97	133	104	107	85	98	79	87	93
West North Central	83	71	95	58	84	87	51	58	59	50
South Atlantic	183	125	149	145	110	86	79	110	96	[2] 65
East South Central	181	122	171	107	171	61	124	51	124	112
West South Central	128	134	84	103	102	40	93	82	88	103
Mountain	91	54	82	63	91	36	146	72	82	90
Pacific	92	114	53	121	64	100	67	97	67	88

[2] Greenville, S. C., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

THE FAR EAST

Report for week ended May 28, 1927.—The following report for the week ended May 28, 1927, was transmitted by the eastern bureau of the health section of the secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Ceylon: Colombo	2	2	0	0	0	0
British India:						
Karachi	0	0	0	0		2
Bombay		5		0	47	29
Vizagapatam		0		0	1	0
Calcutta		0		31	37	28
Madras		0		0	1	0
Negapatam		0		8		1
Rangoon		4		1	13	3
Bassein		3	0	0	0	0
Siam. Bangkok	0	0	5	1	0	1
Straits Settlements:						
Singapore	0	0	0	0	1	1
Federated Malay States. Port Swettenham	0	0	0	0	1	0

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
French Indo-China						
Saigon and Cholon	0	0	9	7	0	0
Haiphong	0	0	91	91	0	0
China:						
Canton	0	0	1	0	10	0
Hong Kong	0	0	0	0	1	0
Tientsin	0	0	0	0	1	0
Manchuria.						
Changchun	0	0	0	0	2	0
Mukden	0	0	0	0	3	0
Egypt. Alexandria	0	0	0	0	3	0

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Arabia.—Jeddah, Perim, Kamaran, Aden.

Iraq—Basra.

Persia.—Mohammerah, Bender-Abbas, Bushire, Lingah.

British India.—Chittagong, Cochin, Tuticorin, Moulmein.

Portuguese India.—Nova Goa.

Straits Settlements—Penang.

Dutch East Indies.—Batavia, Sabang, Belawan-Deli, Pontianak, Semarang, Menado, Cheribon, Palembang, Makassar, Balikpapan, Tarakan, Padang, Surabaya.

Sarawak.—Kuching.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

Portuguese Timor.—Dilly.

French Indo-China.—Tourane.

Philippine Islands.—Manila, Iloilo, Jolo, Cebu, Zamboanga.

China.—Amoy, Shanghai.

Macao.

Formosa.—Keelung, Takao.

Chosen.—Chemulpo, Fusan.

Manchuria.—Yingkow, Antung, Harbin.

Kwangtung.—Port Arthur, Dairen.

Japan.—Yokohama, Nagasaki, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns.

New Guinea.—Port Moresby.

New Britain Mandated Territory—Rabaul and Kokopo.

New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.

Samoa.—Apia.

New Caledonia.—Noumea.

Fiji—Suva,

Hawaii.—Honolulu.

Society Islands.—Papeete.

AFRICA

Egypt.—Port Said, Suez.

Anglo-Egyptian Sudan.—Port Sudan, Suakin.

Eritrea.—Massaua.

French Somaliland.—Djibouti.

British Somaliland.—Berbera.

Italian Somaliland.—Mogadiscio.

Zanzibar.—Zanzibar.

Kenya.—Mombasa.

Tanganyika.—Dar-es-Salaam.

Seychelles.—Victoria.

AFRICA—continued

Portuguese East Africa.—Mozambique, Beira, Lourenço-Marques.
Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.
Reunion.—Saint Denis.

AFRICA—continued

Mauritius.—Port Louis.
Madagascar.—Majunga, Tamatave, Diego-Suarez.

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from:

Dutch East Indies.—Bandjermasin, Samarinda.
U. S. S. R.—Vladivostock.

Belated information:

Week ended May 21: *Pondicherry*, 1 fatal smallpox case; *Karikal*, nil.
Week ended May 14: *Colombo*, 2 plague cases.

Other epidemiological information

Steam Ship *St. François Xavier* arrived at Noumea from Haiphong having cases of measles among coolies on board.

ANGOLA

Epidemic influenza—March 16–April 15, 1927.—Epidemic influenza has been reported in Angola as follows: March 16–31, 1927–436 cases with 17 deaths. April 1–15, 1927, 630 cases. During the latter period six deaths from influenza were reported at Benguela and Ambriz.

Other communicable diseases.—During the period March 16 to 31, 1927, 13 cases of dysentery, 20 of malaria, 17 of pneumonia, 19 of tuberculosis, and 80 of venereal diseases were reported in Angola.

CANADA

Typhoid fever—Montreal—January 2–June 18, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	Apr. 2, 1927	649	48
Jan. 15, 1927	4	3	Apr. 9, 1927	386	40
Jan. 22, 1927	1	2	Apr. 16, 1927	175	38
Jan. 29, 1927	3	1	Apr. 23, 1927	125	43
Feb. 5, 1927	1	0	Apr. 30, 1927	105	23
Feb. 12, 1927	0	0	May 7, 1927	106	19
Feb. 19, 1927	1	2	May 14, 1927	367	16
Feb. 26, 1927	1	1	May 21, 1927	770	26
Mar. 5, 1927	9	1	May 28, 1927	353	38
Mar. 12, 1927	203	4	June 4, 1927	239	37
Mar. 19, 1927	383	14	June 11, 1927	128	36
Mar. 26, 1927	568	22	June 18, 1927	86	

CZECHOSLOVAKIA

Communicable diseases—April, 1927.—During the month of April, 1927, communicable diseases were reported in the Republic of Czechoslovakia as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	3		Puerperal fever	34	13
Cerebrospinal meningitis	27	15	Rabies	1	1
Diphtheria	496	35	Scarlet fever	970	19
Dysentery	18		Trachoma	278	
Malaria	28		Typhoid fever	348	30
Paratyphoid fever	3		Typhus fever	21	

EGYPT

Plague—May 21–27, 1927.—During the week ended May 27, 1927, a case of plague was reported in Egypt, occurring in Tanta District.

Summary—January 1–May 27, 1927.—During the period January 1 to May 27, 1927, 40 cases of plague were reported in Egypt, as compared with 43 cases reported for the corresponding period of the year 1926.

ESTONIA

Communicable diseases—April, 1927.—During the month of April, 1927, communicable diseases were reported in the Republic of Estonia as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	1	Tuberculosis	233
Diphtheria	39	Typhoid fever	33
Measles	349	Typhus fever	1
Scarlet fever	767		

Population: 1,114,630 (estimated).

GERMANY

Vital statistics—Third quarter, 1926—Comparisons with previous years.—Preliminary vital statistics for the third quarter of 1926, comprising July, August, and September, are given as follows:

Marriages	112, 745
Births	301, 579
Deaths [1]	166, 671
Still-born	9, 445

The number of births is the lowest on record since the third quarter of 1918. Comparative figures giving the number of births per 1,000 inhabitants, calculated on the basis of one year, are shown in the following table:

	1913	1924	1925	1926
First quarter	27. 2	21. 7	21. 9	20. 4
Second quarter	26. 8	20. 6	21. 8	20. 2
Third quarter	27. 3	19. 6	20. 0	19. 2
Fourth quarter	26. 3	20. 0	19. 1	
Average	26. 9	20. 5	20. 7	

During the period under consideration the mortality figure shows a decrease. The following table gives the figure per 1,000 inhabitants calculated on the basis of one year for the years 1913, 1924, 1925, and the available period of 1926:

[1] Excluding still-born.

	1913	1924	1925	1926
First quarter	15.9	14.2	12.6	13.1
Second quarter	15.0	12.3	12.0	12.0
Third quarter	14.3	10.8	11.0	10.6
Fourth quarter	14.2	11.6	12.2	
Average	14.8	12.2	11.9	

The mortality of infants under 1 year per 100 births and on the basis of one year, is given in the following comparative table:

	1913	1924	1925	1926
First quarter	14.3	11.2	11.0	10.8
Second quarter	14.7	10.5	9.5	9.9
Third quarter	16.6	10.9	10.7	10.0
Fourth quarter	14.8	10.6	10.9	
Average	15.1	10.8	10.5	

The excess of births over deaths during the third quarter of 1926 shows a further decrease. It amounted to 134,908, or 8.6 per 1,000 of the population, as compared with 140,605, or 9 per 1,000, during the corresponding period of 1925.

GREAT BRITAIN

Vital statistics—England and Wales—January 1–March 31, 1927.—Births and deaths in England and Wales for the period January 1 to March 31, 1927, were reported by the registrar general as follows:

Estimated population	39,067,000
Births	167,126
Annual birth rate per 1,000 population	17.3
Deaths	168,770
Annual death rate per 1,000 population	17.5
Deaths under 1 year	16,040
Deaths under 1 year per 1,000 births	100
Annual death rate per 1,000 population from—	
Diphtheria	0.08
Influenza	1.86
Measles	10
Scarlet fever	.02
Typhoid fever	.01
Whooping cough	.21

Nineteen deaths from smallpox were reported in England and Wales during the quarter.

Influenza was stated to be either a primary or contributory cause of death in 17,931 cases, or 10.62 per cent of the total number of deaths. This number is greater than in any previous first quarter since 1919.

Cases of communicable diseases—13 weeks ended April 2, 1927.—The following table is made up from figures given in the Quarterly Return of the Registrar-General of England and Wales. It gives the number of cases of certain communicable diseases reported in England and Wales during 13 weeks ended April 2, 1927.

	Cases
Diphtheria	12,872
Ophthalmia neonatorum	1,650
Pneumonia	32,577
Puerperal fever	523
Puerperal pyrexia	1,677
Scarlet fever	17,508
Smallpox	6,156
Typhoid fever	432

MADAGASCAR

Plague—March 16-31, 1927.—During the period March 16 to 31, 1927, 96 cases of plague with 86 deaths were reported in the island of Madagascar. The distribution of occurrence by Provinces was as follows: Ambositra—cases, 15; deaths, 10. Antisirabe—1 case, 1 death. Miarinarivo (Itasy)—cases, 27; deaths, 27. Moramanga—cases, 6; deaths, 6. Tananarive—cases, 43; deaths, 38. Tananarive Town—cases, 4; deaths, 4. Distribution according to type of disease was as follows: Bubonic, 42 cases; pneumonic, 21; septicemic, 33.

TUNISIA

Plague—May 20, 1927.—Under date of May 20, 1927, 15 fatal cases of plague were reported in Tunisia, occurring in the districts of Sfax and Susa. The outbreak was stated to be a recrudescence of a previous outbreak in February, 1927.

UNION OF SOUTH AFRICA

Plague—Cape Province—May 1-7, 1927.—During the week ended May 7, 1927, a fatal case of plague, occurring in a native, was reported in the Maraisburg District, Cape Province, Union of South Africa.

VIRGIN ISLANDS

Communicable diseases—May, 1927.—During the month of May, 1927, communicable diseases were reported in the Virgin Islands of the United States as follows:

Island and disease	Cases	Remarks
St. Thomas and St. John:		
Chancroid	3	
Chicken pox	1	
Gonorrhea	3	
Syphilis	2	Secondary and tertiary, one case each.
St. Croix:		
Chicken pox	4	
Gonorrhea	1	
Filariasis	2	Bancrofti.
Leprosy	1	
Schistosomiasis	1	Mansoni.
Syphilis	6	Secondary.
Uncinariasis	1	Necator americanus.

CHOLERA, PLAGUE, SMALLPOX, AND TYPHUS FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the lists of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended July 1, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
India				Apr 17-23, 1927. Cases, 5,949; deaths, 3,226.
Bombay	May 8-14	1		
Calcutta	do	119	85	
Indo-China (French).				
Saigon	Apr. 30-May 6	54	37	Including Cholon.
Siam				May 1-7, 1927: Cases, 32; deaths, 16.
Bangkok	May 1-7	9	1	Apr. 1-May 7, 1927. Cases, 426; deaths, 296.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Ceylon				
Colombo	May 1-7	1	1	
Egypt				May 21-27, 1927: Cases, 1. Total from Jan. 1-May 27, 1927: Cases, 40; corresponding period. 1926. Cases, 43.
Tanta District	May 21-27	1		
Greece				
Patras	May 30-June 5	1		
India				Apr. 17-23, 1927: Cases, 2,189; deaths, 1,480.
Bombay	May 8-14	25	23	
Java				
Batavia	May 1-7	16	16	Province.
East Java and Madura—				
Pasoeroean Residency	May 9			Outbreak reported at Ngadiwono.
Surabaya	Apr. 17-23	11	12	
Madagascar				Mar 16-31, 1927: Cases, 96; deaths, 86 Bubonic, 42; pneumonic, 21; septicemic, 33.
Province—				
Ambositra	Mar 16-31	15	10	Bubonic, 11, pneumonic, 1, septicemic, 3
Antsirabe	do	1	1	Septicemic.
Miarinarivo (Itasy)	do	27	27	Bubonic, 3; pneumonic, 9; septicemic, 15
Moramanga	do	6	6	Bubonic, 3; septicemic, 3
Tananarive	do	43	38	Bubonic, 24; pneumonic, 11; septicemic, 8
Tanarive Town	do	4	4	Bubonic, 1; septicemic, 3.
Siam				Apr. 1-May 7, 1927 Cases, 7; deaths, 6.
Tunisia	Reported May 20	15		In districts of Sfax and Susa.
Turkey.				
Constantinople	May 13-19	1		
Union of South Africa:				
Cape Province—				
Maraisburg District	May 1-7	1	1	Native.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	May 11-20	4		
Oran	May 21-31	15		
British South Africa:				
Northern Rhodesia	Apr. 30-May 6	1		Native.
Canada:				
British Columbia—				
Vancouver	May 23-29	2		
Manitoba—				
Winnipeg	June 12-18	4		
Ontario—				
Ottawa	do	4		

[1] From medical officers of the Public Health Service, American consuls, and other sources For reports received from January 2 to June 24, 1927, see Public Health Reports for June 24, 1927. The tables of epidemic diseases are terminated semiannually and new tables begun.

CHOLERA, PLAGUE, SMALLPOX, AND TYPHUS FEVER—Continued

Reports Received During Week Ended July 1, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 8-14	1		
Hong Kong	do	4	2	
Manchuria—				
Ssupingkai	do	1		
Chosen:				
Chinnampo	Apr. 1-30	1		
Fusan	do	1		
Seishin	do	1		
Egypt:				
Alexandria	May 21-27	3	1	
Great Britain:				
England and Wales	May 22-June 4			Cases, 520.
London	May 15-21	1		
Scotland—				
Dundee	May 29-June 4	3		
India				Apr. 17-23, 1927: Cases, 8,604; deaths, 1,956.
Bombay	May 8-14	58	33	
Calcutta	do	64	47	
Karachi	May 15-21	4	1	
Mexico				
San Luis Potosi	May 29-June 4		2	
Tampico	June 1-10	1	1	
Netherlands India.				
Borneo—				
Holoe Soengo	Apr. 21			Epidemic in two localities.
Persia:				
Teheran	Feb. 21-Mar. 21		1	
Poland	Apr. 10-16	1		
Portugal:				
Lisbon	May 29-June 4	3		
Siam				May 1-7, 1927. Cases, 6; deaths, 3.
Bangkok	May 1-7	2	2	
Spain:				
Valencia	May 29-June 4	2		
Union of South Africa:				
Transvaal—				
Barberton District	May 1-7			Outbreaks.

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	May 11-20	9		
Oran	May 21-31	4		
Chosen:				
Seoul	Apr. 1-30	1		
Czechoslovakia				Apr. 1-30, 1927: Cases, 21.
Egypt:				
Alexandria	May 21-27	1		
Estonia				Apr. 1-30, 1927: Case, 1.
Mexico:				
Mexico City	May 29-June 4	2		Including municipalities in Federal District.
Palestine:				
Mahnaim	May 17-23	1		In Safad District.
Safad	do	1		
Portugal:				
Lisbon	May 29-June 4	1		
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa:				
Cape Province—				
Glen Grey District	May 1-7			Outbreaks.
Qumbu District	do			Do.

X

TREASURY DEPARTMENT

PUBLIC HEALTH REPORTS

ISSUED WEEKLY

BY THE UNITED STATES PUBLIC HEALTH SERVICE

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SPECIAL ARTICLES

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1927

UNITED STATES PUBLIC HEALTH SERVICE

HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

Asst. Surg. Gen C. C PIERCE, *Chief of Division*

The PUBLIC HEALTH REPORTS are issued weekly by the United States Public Health Service through its Division of Sanitary Reports and Statistics, pursuant to acts of Congress approved February 15, 1893, and August 14, 1912.

They contain: (1) Current information of the prevalence and geographic distribution of preventable diseases in the United States in so far as data are obtainable, and of cholera, plague, smallpox, typhus fever, yellow fever, and other communicable diseases throughout the world. (2) Articles relating to the cause, prevention, or control of disease (3) Other pertinent information regarding sanitation and the conservation of the public health.

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PUBLIC HEALTH REPORTS

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THE PUBLIC HEALTH SERVICE NURSING CORPS

By LUCY MINNIGERODE, *Superintendent of Nurses, United States Public Health Service*

After the armistice the question of caring for disabled service men became a vital and immediate problem. Up to that time these sick and wounded patients had been cared for in all Government hospitals, but the great majority were in Army and Navy institutions.

By an act of Congress approved March 3, 1919, the postwar care of these disabled ex-service men was assigned to the Public Health Service, and the service was confronted with the problem of providing, for immediate use, hospitals, physicians, and nurses. At that time there were 23 marine hospitals with a bed capacity of 1,500, which had to be expanded to care for several thousand sick and wounded patients. Fortunately, the Reserve Corps of medical officers could be expanded and there were many physicians available who had served with the military forces. Until this time, however, or rather until the outbreak of the war, graduate nurses were only occasionally employed in the Public Health Service; the nursing staff of the hospitals had consisted of male nurses and orderlies only. In undertaking the work in the extra-cantonment zones the immediate employment of public health nurses was necessary. These nurses were secured through the American Red Cross; and when that work was discontinued in June, 1919, 217 nurses were on duty. During this time a nurse was appointed as field director of nurses in extra-cantonment zones, but without jurisdiction over other nurses of the service.

In the Ellis Island hospital there had been nurses for a number of years. This hospital was conducted for sick immigrants and contained 650 beds, which were generally occupied. A few nurses had also been employed for public health work during the course of any given piece of work. The hospitals established in industrial plants had been staffed with nurses detailed from the Red Cross; but with the ending of mass production of war materials, these hospitals had been closed.

Such was the nursing situation when the Public Health Service was faced with the necessity for establishing a sufficient number of hospitals to care for the many thousand sick and wounded who were

returning to this country from the battle fields abroad. Machinery to put this project into operation was set up; search was made for available sites for hospitals; and physicians, nurses, dietitians, reconstruction aides and other personnel were needed. A superintendent of nurses was appointed. There were then on duty in the Public Health Service about 90 nurses. From this number was built up the present nursing service, with the close cooperation and help of the Red Cross. Just as nurses had been secured by thousands for the Army and Navy during the war, so were they secured by hundreds to meet this new demand. Recruiting among the returning nurses was inaugurated through the placement bureau in New York; and, as usual, a sufficient number responded to this new demand upon them. During the three years that this work of caring for ex-service patients was done by the Public Health Service, 87 hospitals in all were established and 1,800 nurses were on duty. It has always been a matter of pride to the Public Health Service, as showing the caliber of the nurses on duty, that, when the transfer of hospitals was made, practically over night, 1,442 nurses were transferred by the Public Health Service to the Veterans' Bureau, and many of those nurses are still in Veterans' Bureau hospitals to-day. This transfer left the Public Health Service with 25 hospitals and 356 nurses. The bed capacity of service hospitals had increased from 1,500 to 3,500, and two new hospitals had been acquired. It was during this period, also, that the Government established a national leprosarium for the care and treatment of lepers. For this purpose the already existing leprosarium at Carville, La., was obtained and is being operated now for the care and treatment of lepers. It has a bed capacity of 450. The nursing is done by Catholic Sisters, and the leprosarium is one of the show places of the State. It is about 90 miles from New Orleans, and every facility for treatment and for the alleviation of their unfortunate condition is made available for the patients.

Nurses are now on duty in all hospitals, in the larger relief stations, in quarantine stations, rural sanitation work, child hygiene, industrial hygiene, the collection of morbidity statistics, and in the trachoma-investigation work.

Trachoma investigation is one of the most interesting branches of work done by the Public Health Service, and it has been eminently successful in decreasing the number of cases wherever the work has been done. Small hospitals are established in communities where trachoma is prevalent, and the work is carried on in cooperation with State and local health agencies. The patients are cared for in the little hospital, generally a house converted temporarily to serve as a hospital. Two nurses are on duty in each hospital—one as housekeeper and one as treatment nurse. There is a chief nurse in charge of the nurses' work, and new appointees are given a course of instruc-

tion at headquarters at Rolla, Mo. The hospitals usually care for about 25 patients at a time. Each case is treated five times daily—twice by the doctor in charge, assisted by the nurse, and three times by the nurse. There is rarely any other nursing work to be done for them. The nurses change duties every two weeks. The work is interesting, and the nurses usually stay for several years. It is repaying in results accomplished and in the appreciation of patients for the help given.

While the duties of the nurses in the Army, Navy, and Veterans' Bureau are limited to the needs of soldiers, sailors, and ex-service men, the Public Health Service is responsible to some degree for the health conditions throughout the whole country. It works in close cooperation with State and local health officers and assists in any health emergency, with advice and personnel, whenever requested. In serious epidemics the Public Health Service is called upon to assist in the work of suppression and control, and its nurses might be detailed to such work.

Nurses in rural sanitation work are assigned to State health authorities or to county health officers. In the making of health surveys in any given city or community, nurses of the Public Health Service may be used.

While the Public Health Service is concerned with health in its broadest sense, its work in the various States is practically solely in an advisory capacity, and it is reasonable to believe that it will develop no extensive public health nursing work for some time to come. The hospital work is increasing steadily, and there are to be built several new hospitals which will be up-to-date institutions in every respect.

The establishment of the section of Government nursing services has brought the Government nursing service very close to the American Nurses' Association, which, with the *American Journal of Nursing*, has given both support and assistance to the superintendents of nurses in the Government service.

The United States Government employs more nurses in its varied services than any other organization in the world, and it is well worthy of the support of nurses throughout the country; and since it cares for the defenders of our country in times of stress, for the merchant seamen who carry supplies in time of war, for the civilian employees on transports, for Coast Guard personnel, life-saving personnel, lighthouse keepers, and other Government workers, we feel that the best the nursing profession has to give should be made available for these services.

In addition to nurses there are on duty in most of the Public Health Service hospitals dietitians and physiotherapists, whose qualifications must meet a definite standard established by the service. These

groups are on the same basis as nurses, and all receive the same pay and are appointed to the same grades.

In the Public Health Service 356 nurses, 40 aides, 21 dietitians, and 3 hospital social workers are all combined in the Nursing Corps under the superintendent of nurses. This has been found desirable, in view of the limited number of workers. There is practically no friction among the workers at the stations. The work goes smoothly, the personnel are friendly, a homelike spirit pervades the service—all desirable considerations when different fields of endeavor are being developed.

Professional qualifications for appointment of nurses in the Public Health Service are the same as those for appointment in the Army and Navy. However, the Army and Navy Nursing Corps are established by legislation, whereas the Public Health Service nurses are civilian employees and must be appointed under the Civil Service Commission.

The five established Government nursing services—Army, Navy, Public Health Service, Veterans' Bureau, and Indian Bureau—work in very close cooperation, and all maintain the highest professional standards.

The Public Health Service is composed of highly qualified medical personnel, qualified in every field of medical work—curative, preventive, and investigative. In the field of public health, experts in every branch have been developed.

We, in Government service, believe that the Government offers an unusual field of opportunity to nurses who desire permanent work in their chosen profession.

A circular of information, which is sent to applicants for appointment in the Public Health Service Nursing Corps, a civil service application blank, and a blank for information regarding experience will be sent on application to the Surgeon General, United States Public Health Service, Washington, D. C.

SUMMARY OF PROVISIONAL BIRTH, DEATH, AND INFANT MORTALITY FIGURES IN THE BIRTH REGISTRATION AREA, 1926 [1]

The Department of Commerce announces that birth rates for 1926 were lower than for 1925 in 26 of the 28 States for which figures for the two years are shown in the following summary. The highest 1926 birth rate (26.4 per 1,000 population) is shown for Florida and the lowest (14.2) is for Montana.

[1] Exclusive of Idaho, Massachusetts, Mississippi, North Carolina, Utah, and Vermont, from which complete transcripts for 1926 have not been received.

Death rates for 1926 were higher than for 1925 in 23 of the 28 States shown for both years. The highest 1926 death rate (15.3 per 1,000 population) is shown for Florida and the lowest (7.8) for Montana.

Infant mortality rates for 1926 were generally higher than those for 1925, as 21 of the 28 States show higher rates in 1926. For States the highest 1926 infant mortality rate (92.9) appears for Delaware and the lowest (51.6) for Oregon.

Infant mortality rates are shown for both years for 48 cities of 100,000 population or more in 1920. For 27 of these cities the 1926 infant mortality rates were higher than those of the preceding year, the highest 1926 rate (107.4) being for Richmond, Va., and the lowest (38.7) for Portland, Oreg.

Births and deaths (exclusive of stillbirths), with rates per 1,000 population, and infant mortality, in the birth registration area in continental United States, 1926

Area	Number, 1926			Rate per 1,000 population				Deaths under 1 year per 1,000 births	
	Births	Deaths		Births		Deaths			
		All ages	Under 1 year	1926	1925	1926	1925	1926	1925
Total [1]	1,597,903	961,752	116,333	20.1	21.1	12.1	11.7	72.8	71.5
STATES									
Arizona	8,394	5,554	1,003	18.9	(2)	12.5	(2)	119.5	(2)
California	82,443	58,769	5,187	19.1	20.4	13.6	13.6	62.9	68.7
Connecticut	29,077	18,319	2,101	18.1	18.9	11.4	11.2	72.3	73.3
Delaware	4,199	3,435	390	17.5	19.6	14.3	13.1	92.9	90.5
Florida	34,798	20,090	2,609	26.4	23.3	15.3	13.3	75.0	74.2
Illinois	133,942	85,329	9,295	18.6	19.1	11.8	11.5	69.4	72.5
Indiana	62,788	40,015	4,542	20.1	20.8	12.8	12.5	72.3	67.9
Iowa	44,477	25,154	2,644	18.4	19.7	10.4	10.0	59.4	56.0
Kansas	35,137	19,100	2,293	19.3	20.3	10.5	10.2	65.3	61.7
Kentucky	59,986	29,821	4,568	23.8	25.3	11.8	11.3	76.2	70.5
Maine	16,390	11,355	1,314	20.7	22.2	14.4	13.7	80.2	76.3
Maryland	32,839	22,653	2,853	20.8	21.7	14.8	13.9	86.9	90.0
Michigan	98,782	54,083	7,625	22.5	23.2	12.3	11.5	77.2	75.3
Minnesota	52,451	25,769	3,011	19.8	20.6	9.7	9.7	57.4	60.3
Montana	9,845	5,391	757	14.2	15.2	7.8	7.7	76.9	70.9
Nebraska	27,825	12,450	1,608	20.1	21.3	9.0	9.1	57.8	57.7
New Hampshire	8,721	6,660	678	19.2	20.8	14.7	14.5	77.7	76.2
New Jersey	72,402	44,878	5,075	19.7	20.6	12.2	11.7	70.1	68.9
New York	222,882	151,346	15,662	19.7	20.6	13.4	12.8	70.3	67.6
North Dakota	14,522	5,222	1,003	22.6	22.6	8.1	7.9	69.1	71.6
Ohio	123,688	78,692	9,419	18.7	19.6	11.9	11.4	76.2	69.6
Oregon	14,754	9,810	762	16.8	17.9	11.2	11.2	51.6	51.1
Pennsylvania	207,689	120,538	17,134	21.6	22.7	12.5	12.2	82.5	82.0
Rhode Island	13,592	8,791	1,112	19.6	21.2	12.7	12.1	81.8	72.8
Virginia	57,796	30,818	4,814	22.9	24.6	12.2	11.8	83.3	80.8
Washington	23,970	15,030	1,347	15.6	16.4	10.2	10.1	56.2	56.4
West Virginia	43,936	18,143	3,595	26.3	27.7	10.9	10.5	81.8	79.8
Wisconsin	55,666	30,161	3,844	19.3	20.1	10.5	10.3	69.1	67.2
Wyoming	4,388	1,902	333	18.6	21.1	8.1	8.3	75.9	63.9
REGISTRATION CITIES									
Arizona:									
Phoenix	1,417	1,216	129	33.7	(2)	28.9	(2)	91.0	(2)
Tucson	813	923	119	29.6	(2)	33.6	(2)	146.4	(2)

[1] Birth registration area exclusive of Arizona, Idaho, Massachusetts, Mississippi, North Carolina, Utah, and Vermont for both years. Arizona and Idaho were not in the registration area in 1925. The 1926 data for the remaining 5 States are incomplete.

[2] Not in the registration area in 1925.

Births and deaths (exclusive of stillbirths), with rates per 1,000 population, and infant mortality, in the birth registration area in continental United States, 1926—Continued

Area	Number, 1926			Rate per 1,000 population				Deaths under 1 year per 1,000 births	
	Births	Deaths		Births		Deaths			
		All ages	Under 1 year	1926	1925	1926	1925	1926	1925
REGISTRATION CITIES—contd.									
California:									
Alameda	605	360	24	18.7	16.5	11.1	10.0	39.7	53.2
Bakersfield	660	310	58	25.8	30.0	12.1	16.6	87.9	86.5
Berkeley	863	671	32	12.7	13.5	9.9	9.5	37.1	49.2
Eureka	414	271	27	30.4	31.8	19.9	20.4	65.2	53.6
Fresno	1,116	512	65	18.5	21.1	8.5	9.1	58.2	69.6
Glendale	788	597	38	30.8	33.5	23.3	24.5	48.2	40.7
Long Beach	1,948	1,221	90	19.9	23.4	12.5	13.8	46.2	50.2
Los Angeles [3]	18,100	12,201	1,080	(4)	(4)	(4)	(4)	59.7	66.6
Oakland	4,392	2,804	277	16.8	17.7	10.7	10.2	63.1	52.8
Pasadena	1,156	880	42	19.8	22.7	15.1	14.5	36.3	45.8
Pomona	333	247	22	21.2	22.9	15.7	14.2	66.1	51.1
Richmond	370	152	20	15.7	16.5	6.4	5.5	54.1	48.1
Riverside	622	451	41	(4)	(4)	(4)	(4)	65.9	92.2
Sacramento	1,955	1,373	113	26.6	28.2	18.7	19.3	57.8	76.4
San Bernardino	849	536	75	36.0	38.6	22.7	22.8	88.3	89.9
San Diego	2,361	1,848	108	21.5	23.2	16.8	16.7	45.7	54.9
San Francisco	8,345	7,662	415	14.7	15.5	13.5	13.3	49.7	55.5
San Jose	911	569	52	20.6	20.3	12.9	11.4	57.1	46.2
Santa Ana	555	281	19	26.9	30.0	13.6	13.9	34.2	59.8
Santa Barbara	550	335	42	22.2	23.0	13.5	14.1	76.4	76.2
Santa Cruz	240	235	13	22.0	22.0	21.5	18.1	54.2	41.7
Santa Monica	689	383	42	34.1	30.7	19.0	18.6	61.0	60.4
Stockton	885	614	55	18.2	19.0	12.7	12.3	62.1	71.0
Vallejo	249	186	10	9.0	8.8	6.7	6.5	40.2	63.8
Connecticut:									
Ansonia	228	170	26	11.8	14.9	8.8	8.2	114.0	95.1
Bridgeport	3,056	1,602	223	(4)	(4)	(4)	(4)	73.0	53.6
Bristol	675	262	55	26.6	21.0	10.3	8.9	81.5	82.5
Danbury town	524	400	35	23.5	23.5	17.9	16.4	66.8	91.4
Derby	412	176	31	32.4	33.8	13.9	15.1	75.2	80.6
East Hartford town	137	103	12	9.8	10.8	7.4	6.8	87.6	68.0
Enfield town	246	113	20	18.8	21.9	8.6	8.4	81.3	81.6
Fairfield town	134	120	14	8.9	12.3	7.9	6.6	104.5	55.9
Greenwich town	495	254	29	19.1	18.1	9.8	10.4	58.6	52.5
Hartford	4,136	2,129	301	25.2	24.7	13.0	12.8	72.8	71.9
Manchester town	391	166	13	18.2	21.5	7.7	10.1	33.2	66.5
Meriden	700	476	54	19.1	20.8	13.0	12.8	77.1	54.4
Middletown	574	530	35	24.8	25.2	22.9	24.0	61.0	57.1
Milford town	113	134	12	8.0	9.8	9.5	10.1	106.2	53.0
Naugatuck	120	92	10	7.2	8.0	5.5	5.9	83.3	45.8
New Britain	1,563	637	127	22.5	24.2	9.2	9.3	81.3	103.2
New Haven	3,706	2,212	199	20.4	21.3	12.2	12.1	53.7	66.0
New London	796	416	47	26.8	25.5	14.0	14.6	59.0	66.6
Norwalk	638	459	50	21.2	21.6	15.2	13.7	78.4	64.4
Norwich town	748	523	60	24.4	25.2	17.0	16.4	80.2	88.3
Orange town	369	272	21	18.3	19.9	13.5	13.7	56.9	46.0
Stamford town	1,116	625	73	23.4	24.2	13.1	12.5	65.4	78.0
Stonington town	128	138	8	11.6	14.5	12.5	10.1	62.5	31.3
Stratford town	172	131	15	10.2	13.0	7.8	7.4	87.2	42.9
Torrington town	484	240	33	18.3	18.8	9.1	7.6	68.2	65.4
Wallingford town	98	123	5	7.8	11.2	9.8	10.2	51.0	57.1
Waterbury	2,231	1,194	182	(4)	(4)	(4)	(4)	81.6	82.8
Windham town	297	185	19	20.3	22.2	12.7	13.7	64.0	74.5
Delaware:									
Wilmington	2,102	1,615	183	17.0	19.2	13.0	11.8	87.1	87.0
District of Columbia:									
Washington	8,918	7,388	758	16.9	17.7	14.0	13.8	85.0	87.4

[3] Includes Venice.

[4] Population not estimated.

Births and deaths (exclusive of stillbirths), with rates per 1,000 population, and infant mortality, in the birth registration area in continental United States, 1926—Continued

Area	Number, 1926			Rate per 1,000 population				Deaths under 1 year per 1,000 births	
	Births	Deaths		Births		Deaths			
		All ages	Under 1 year	1926	1925	1926	1925	1926	1925
REGISTRATION CITIES—contd.									
Florida:									
Jacksonville	3,168	2,253	263	23.1	18.6	16.5	14.3	83.0	77.7
Key West	371	226	31	27.1	23.2	16.5	15.2	83.6	94.3
Miami	3,381	1,730	299	26.2	34.9	13.4	20.0	88.4	99.1
Pensacola	707	521	80	([4])	27.4	([4])	18.5	113.2	119.6
St. Petersburg	1,036	679	56	21.4	29.6	14.0	24.3	54.1	81.9
Tampa	2,776	1,632	239	27.2	23.8	16.0	13.4	86.1	76.8
Illinois:									
Alton	728	397	60	26.8	24.4	14.6	14.6	82.4	91.6
Aurora	1,091	764	62	20.7	25.4	14.5	13.1	56.8	71.2
Belleville	501	372	31	18.3	18.7	13.6	12.8	61.9	43.7
Berwyn	330	172	17	16.8	16.0	8.7	8.7	51.5	79.2
Bloomington	553	432	42	18.0	19.6	14.1	14.2	75.9	78.7
Blue Island	390	207	25	28.9	29.2	15.3	13.6	64.1	80.3
Cairo	251	297	29	16.1	14.4	19.0	19.3	115.5	129.5
Canton	216	195	18	19.6	21.5	17.7	17.3	83.3	105.9
Centralia	271	158	16	18.8	19.4	11.0	11.1	59.0	51.3
Champaign	407	217	23	22.0	22.5	11.7	13.0	56.5	92.9
Chicago	59,988	35,623	4,006	19.7	19.9	11.7	11.5	66.8	74.8
Chicago Heights	384	258	44	17.0	17.4	10.5	10.5	114.6	117.2
Cicero	522	360	39	8.0	9.6	5.5	5.6	74.7	84.0
Danville	870	620	81	23.1	22.6	16.5	15.4	93.1	105.1
Decatur	1,275	755	93	23.2	20.9	13.7	12.2	72.9	65.7
East St. Louis	1,471	924	148	20.3	20.4	12.8	12.5	100.6	94.0
Elgin	619	758	45	18.2	19.2	22.3	21.4	72.7	48.8
Evanston	1,724	623	89	38.2	34.8	13.8	13.0	51.6	43.2
Forest Park	71	135	4	5.2	7.0	9.9	6.8	56.3	32.6
Freeport	485	359	39	23.2	23.5	17.2	14.9	80.4	53.4
Galesburg	545	404	43	21.8	23.1	16.2	13.7	78.9	64.7
Granite City	595	257	54	32.0	30.7	13.8	12.3	90.8	109.1
Herrin	276	170	23	20.1	19.2	12.4	12.3	83.3	102.0
Jacksonville	353	635	23	22.1	21.2	39.7	32.1	65.2	68.2
Joliet	810	593	75	19.8	18.4	14.5	13.0	92.6	95.0
Kankakee	447	294	37	23.8	25.1	15.6	13.4	82.8	83.9
Kewanee	381	237	36	19.0	19.2	11.8	10.1	94.5	71.2
La Salle	301	184	27	20.6	22.3	12.6	11.6	89.7	96.8
Lincoln	219	255	26	17.5	19.2	20.4	21.5	118.7	79.8
Mattoon	334	211	22	22.3	22.4	14.1	13.5	65.9	81.8
Maywood	159	139	14	10.9	10.7	9.5	8.6	88.1	85.5
Moline	662	359	40	19.2	19.0	10.4	10.2	60.4	42.0
Murphysboro	169	150	21	13.1	15.9	11.6	23.6	124.3	105.5
Oak Park	2,531	824	89	47.3	44.4	15.4	14.8	35.2	35.1
Ottawa	305	204	14	25.8	24.4	17.3	14.0	45.9	74.7
Pekin	281	151	20	20.7	24.1	11.1	11.6	71.2	71.9
Peoria	1,503	1,108	93	18.2	18.6	13.4	13.8	61.9	72.5
Quincy	757	605	55	19.3	20.5	15.5	15.0	72.7	91.5
Rock Island	410	404	20	10.0	10.0	9.9	8.1	48.8	75.2
Rockford	1,664	835	101	21.2	20.6	10.7	8.9	60.7	52.9
Springfield	1,317	1,094	99	20.4	21.8	16.9	17.5	75.2	85.4
Streator	415	224	25	27.5	26.4	14.8	15.0	60.2	82.7
Urbana	165	133	13	14.3	18.3	11.6	13.0	78.8	77.3
Waukegan	465	278	43	20.9	18.8	12.5	9.7	92.5	63.0
Indiana:									
Anderson	740	434	56	21.4	21.4	12.5	11.9	75.7	64.6
Bloomington	403	215	38	31.5	34.5	16.8	16.7	94.3	103.4
Clinton	154	107	19	10.9	13.9	7.6	10.7	123.4	121.7
Crawfordsville	179	107	9	16.9	17.8	15.8	13.0	50.3	69.5
East Chicago	1,128	456	135	23.8	23.5	9.6	9.0	119.7	112.8

[4] Population not estimated.

Births and deaths (exclusive of stillbirths), with rates per 1,000 population, and infant mortality, in the birth registration area in continental United States, 1926—Continued

Area	Number, 1926			Rate per 1,000 population				Deaths under 1 year per 1,000 births	
	Births	Deaths		Births		Deaths			
		All ages	Under 1 year	1926	1925	1926	1925	1926	1925
REGISTRATION CITIES—contd.									
Indiana—Continued									
Elkhart	644	350	37	23.3	22.3	13.0	12.7	57.5	67.9
Elwood	262	138	22	24.3	26.1	12.8	12.6	84.0	59.9
Evansville	1,675	1,259	117	17.6	17.5	13.2	12.4	69.9	67.1
Fort Wayne	2,278	1,251	122	22.8	24.3	12.5	11.8	53.6	63.8
Frankfort	225	161	19	16.9	18.5	12.1	14.1	84.4	82.0
Gary	2,167	1,068	212	26.8	26.0	13.2	13.4	97.8	95.1
Hammond	1,356	598	103	25.9	25.3	11.4	10.1	76.0	76.1
Huntington	280	168	20	17.2	21.7	10.3	11.6	71.4	92.8
Indianapolis	6,860	5,145	526	18.7	19.2	14.0	13.8	76.7	69.5
Jeffersonville	249	181	21	24.7	25.9	17.9	17.8	96.4	80.2
Kokomo	751	398	62	19.8	20.9	10.5	10.4	82.6	75.0
Lafayette	667	541	58	27.8	28.6	22.7	19.3	87.0	73.4
La Porte	451	225	32	25.1	23.0	12.5	13.3	71.0	67.0
Logansport	340	274	14	14.5	17.2	11.7	11.3	41.2	65.5
Marion	466	336	35	17.5	19.7	12.6	12.2	75.1	67.4
Michigan City	535	296	40	26.4	27.3	14.6	14.4	74.8	70.3
Mishawaka	765	288	58	45.3	45.1	17.0	15.7	75.8	79.7
Muncie	814	515	53	18.7	19.3	11.8	11.1	65.1	70.8
New Albany	527	368	51	22.9	23.7	16.0	14.0	96.8	45.9
New Castle	383	203	43	22.0	20.5	11.7	10.6	112.3	68.8
Peru	238	188	22	18.7	20.4	14.8	12.2	92.4	84.9
Richmond	469	358	40	15.1	14.6	11.5	10.9	85.3	71.2
South Bend	2,210	992	157	27.1	29.2	12.1	12.1	71.0	62.0
Terre Haute	1,133	922	69	15.8	17.9	12.8	14.5	60.9	102.2
Vincennes	381	280	38	20.6	24.3	15.1	16.4	99.7	94.4
Whiting	231	75	26	18.5	17.3	6.0	6.6	112.6	128.0
Iowa:									
Boone	234	162	20	18.1	19.0	12.6	11.5	85.5	53.5
Burlington	568	387	36	21.0	20.2	14.3	14.7	63.4	65.7
Cedar Rapids	875	550	49	16.8	18.2	10.6	10.7	56.0	59.9
Clinton	397	367	23	14.6	16.5	13.5	15.2	'57.9	87.4
Council Bluffs	904	521	64	22.1	25.3	12.7	13.3	70.8	84.4
Davenport	918	742	52	(4)	18.2	(4)	13.3	56.6	53.5
Des Moines	2,919	1,710	202	20.0	22.1	11.7	10.7	69.2	60.0
Dubuque	806	616	57	19.4	22.1	14.8	15.1	70.7	76.2
Fort Dodge	501	280	46	22.4	21.1	12.5	12.6	91.8	76.6
Fort Madison	275	182	22	24.5	23.4	16.2	15.4	80.0	133.1
Iowa City	467	431	44	28.3	30.5	26.1	30.0	94.2	94.4
Keokuk	349	262	20	24.1	23.9	18.1	18.8	57.3	57.6
Marshalltown	306	299	41	17.8	23.3	17.4	18.4	134.0	81.4
Mason City	507	277	35	21.6	23.7	11.8	10.2	69.0	59.6
Muscatine	322	232	19	18.9	18.9	13.6	14.0	59.0	50.3
Ottumwa	564	375	47	20.6	22.5	13.7	13.8	83.3	65.8
Sioux City	1,701	960	141	21.8	23.4	12.4	11.8	82.9	88.9
Waterloo	742	436	51	20.1	20.3	11.8	10.2	68.7	49.0
Kansas:									
Arkansas City	297	186	21	20.2	27.2	12.7	13.2	70.7	60.4
Atchison	270	187	20	17.3	18.2	12.0	13.6	74.1	62.3
Chanute	218	162	21	22.2	20.8	16.5	14.0	96.3	44.1
Coffeyville	325	160	22	19.2	21.9	10.0	10.4	67.7	93.0
Eldorado	220	132	22	23.2	25.5	13.9	11.6	100.0	82.0
Emporia	351	199	20	28.1	24.7	15.9	17.6	57.0	72.0
Fort Scott	226	226	22	18.8	22.3	18.8	18.1	97.3	53.4
Hutchinson	495	268	30	18.5	19.2	10.0	11.3	60.6	58.2
Independence	223	155	15	20.5	20.1	14.2	12.0	67.3	59.4
Kansas City	2,476	1,590	200	21.2	23.1	13.6	14.3	84.4	87.5
Lawrence	260	184	12	21.1	19.0	14.9	14.9	46.2	38.3
Leavenworth	272	245	20	13.4	14.4	11.2	12.7	73.5	110.7
Parsons	229	242	23	15.4	19.5	16.3	14.9	100.4	86.2
Pittsburg	361	139	22	18.5	18.4	7.1	9.1	60.9	66.7
Salina	383	195	26	23.2	22.7	11.8	12.7	67.9	78.3
Topeka	1,253	809	82	22.2	23.1	14.3	14.4	65.4	66.8
Wichita	1,914	1,156	154	20.7	23.8	12.5	12.4	80.5	66.7

[4] Population not estimated.

***Births and deaths (exclusive of stillbirths), with rates per 1,000 population, and infant mortality, in the birth registration area in continental United States, 1926*—Continued**

Area	Number, 1926			Rate per 1,000 population				Deaths under 1 year per 1,000 births	
	Births	Deaths		Births		Deaths			
		All ages	Under 1 year	1926	1925	1926	1925	1926	1925
REGISTRATION CITIES—contd.									
Kentucky:									
Ashland	814	337	76	32.3	35.9	13.4	15.4	93.4	90.1
Covington	1,473	973	120	25.2	25.8	16.6	15.7	81.5	65.8
Henderson	297	235	35	23.6	20.6	18.7	17.2	117.8	115.8
Lexington	898	960	88	18.9	21.3	20.2	20.9	98.0	79.9
Louisville	6,227	4,733	586	20.0	20.2	15.2	14.3	94.1	80.9
Newport	495	317	44	16.9	19.1	10.8	11.4	88.9	94.6
Owensboro	509	366	41	22.9	24.8	16.5	15.6	80.6	98.9
Paducah	599	491	57	23.0	20.1	18.8	18.3	95.2	142.0
Maine:									
Auburn	253	200	25	13.8	15.3	10.9	11.7	98.8	86.6
Augusta	280	340	27	19.0	21.8	23.1	20.8	96.4	81.5
Bangor	598	558	43	22.3	21.7	20.8	18.6	71.9	74.7
Bath	148	166	11	(4)	(4)	(4)	(4)	74.3	107.8
Biddeford	337	277	19	28.9	32.0	11.9	15.2	91.2	76.0
Lewiston	921	619	108	25.9	27.9	17.4	17.3	117.3	121.0
Portland	1,404	1,154	106	18.4	21.6	15.1	14.8	75.5	64.5
Sanford town	422	168	36	35.8	34.7	14.2	11.2	85.3	54.6
Waterville	405	213	25	27.7	29.9	14.6	12.8	61.7	53.4
Maryland:									
Annapolis	244	172	18	18.6	19.8	13.1	11.4	73.8	75.1
Baltimore	16,461	12,210	1,359	20.4	21.5	15.1	14.6	82.6	81.5
Cumberland	949	511	86	27.6	27.0	14.9	15.1	90.6	83.5
Frederick	365	254	27	30.2	28.7	21.0	21.5	74.0	81.4
Hagerstown	703	446	69	22.0	21.0	13.9	11.5	98.2	89.7
Michigan:									
Adrian	305	232	26	24.2	23.6	18.4	16.1	85.2	78.0
Alpena	324	176	27	29.2	26.5	15.9	15.5	83.3	78.2
Ann Arbor	736	953	72	32.4	32.4	42.0	31.9	97.8	105.7
Battle Creek	972	624	80	22.3	20.6	14.3	13.9	82.3	94.3
Bay City	1,078	630	76	21.9	21.8	12.8	12.9	70.5	66.7
Benton Harbor	371	214	10	25.9	26.7	15.0	15.2	27.0	77.5
Detroit	34,115	16,225	2,875	26.4	25.7	12.6	11.0	84.3	80.1
Escanaba	427	226	27	32.6	34.6	17.2	16.3	63.2	63.9
Flint	3,312	1,295	280	24.4	23.7	9.5	7.7	84.5	74.4
Grand Rapids	3,534	1,773	235	22.7	23.6	11.4	11.5	56.5	68.5
Hamtramck	1,097	418	130	12.5	17.5	4.8	4.3	118.5	74.1
Highland Park	1,708	625	96	22.2	22.1	8.1	7.7	56.2	51.9
Holland	285	129	19	21.4	24.7	9.7	8.5	66.7	52.6
Ironwood	316	143	34	17.9	21.8	8.1	8.7	107.6	64.7
Ishpeming	227	151	22	21.6	20.6	14.4	12.5	96.9	60.2
Jackson	1,221	753	99	20.5	18.9	12.6	12.5	81.1	86.4
Kalamazoo	1,277	978	95	23.4	23.6	17.9	17.6	74.4	72.8
Lansing	1,617	767	111	22.1	23.2	10.5	10.5	68.6	81.5
Marquette	359	201	28	26.6	28.8	14.9	14.0	78.0	82.9
Monroe	396	187	40	26.9	26.3	12.7	10.6	101.0	77.5
Muskegon	1,146	582	91	25.9	26.4	13.1	11.8	79.4	91.5
Owosso	318	226	29	21.9	25.8	15.6	15.4	91.2	76.3
Pontiac	1,175	610	86	23.6	22.3	12.2	14.1	73.2	76.3
Port Huron	731	451	59	23.8	24.2	14.7	13.3	80.7	101.8
Saginaw	1,603	1,083	150	21.9	21.7	14.8	12.8	93.6	81.7
Sault Ste. Marie	312	178	25	25.8	24.5	14.7	14.5	80.1	114.9
Traverse City	187	330	12	17.1	21.1	30.2	30.4	64.2	64.9
Wyandotte	711	302	62	28.1	27.8	11.0	12.3	87.2	80.0
Minnesota:									
Austin	285	121	16	23.4	26.0	9.9	9.5	56.1	57.0
Duluth	2,418	1,195	142	21.4	20.2	10.6	10.0	58.8	66.4
Faribault	305	210	9	24.4	26.7	16.8	18.0	29.5	45.7
Hibbing	432	137	33	22.5	28.8	7.4	9.8	76.4	57.8
Mankato	448	203	21	32.2	31.2	14.5	16.3	46.9	70.1

[4] Population not estimated.

Births and deaths (exclusive of stillbirths), with rates per 1,000 population, and infant mortality, in the birth registration area in continental United States, 1926—Continued

Area	Number, 1926			Rate per 1,000 population				Deaths under 1 year per 1,000 births	
	Births	Deaths		Births		Deaths			
		All ages	Under 1 year	1926	1925	1926	1925	1926	1925
REGISTRATION CITIES—contd.									
Minnesota—Continued.									
Minneapolis	9,195	5,002	518	21.2	22.2	11.5	11.6	56.3	60.5
Rochester	447	900	30	25.3	24.8	50.8	50.8	67.1	61.3
St. Cloud	624	222	48	32.2	31.1	11.4	13.4	76.9	92.3
St. Paul	5,683	3,053	318	22.9	24.1	12.3	12.7	56.0	58.0
Virginia	303	130	17	18.5	17.9	7.9	7.6	56.1	80.1
Winona	422	255	16	21.6	22.2	13.1	10.7	37.9	32.4
Montana:									
Anaconda	239	149	20	18.8	20.1	11.7	11.2	83.7	69.8
Billings	362	198	37	19.6	24.8	10.7	11.7	102.2	91.7
Butte	668	673	57	15.5	15.4	15.6	13.9	85.3	89.1
Great Falls	672	302	49	21.7	23.0	9.8	9.3	72.9	58.1
Helena	272	179	10	22.6	17.1	14.9	13.6	36.8	87.4
Missoula	334	248	23	26.4	30.3	19.6	16.9	68.9	52.1
Nebraska:									
Grand Island	382	232	36	24.0	24.0	14.6	14.5	94.2	66.3
Hastings	353	216	37	26.7	25.9	16.4	14.0	104.8	74.2
Lincoln	1,287	800	83	20.8	21.7	12.9	12.9	64.5	64.4
North Platte	238	117	14	16.6	16.1	8.2	8.7	58.8	90.5
Omaha	4,572	2,778	288	21.2	23.2	12.9	13.3	63.0	67.3
New Hampshire:									
Berlin	540	171	42	28.4	27.8	9.0	9.3	77.8	87.0
Concord	432	557	28	19.1	20.6	24.6	21.7	64.8	60.5
Dover	268	230	18	20.6	21.8	17.7	17.8	67.2	63.4
Keene	275	200	20	22.9	27.4	10.7	17.3	72.7	61.3
Laconia	271	171	24	23.8	24.4	15.0	20.3	88.6	119.6
Manchester	1,666	956	151	19.8	22.1	11.4	11.1	90.6	100.1
Nashua	785	385	52	26.2	26.6	12.8	14.0	66.2	86.0
Portsmouth	255	192	27	16.9	22.1	12.7	13.1	105.9	76.0
New Jersey:									
Asbury Park	186	178	22	13.4	16.6	12.8	10.5	118.3	52.9
Atlantic City	1,292	1,225	101	24.0	23.1	22.8	20.2	78.2	75.5
Bayonne	1,922	732	142	21.1	24.3	8.0	8.0	73.9	68.2
Belleville	354	223	30	18.2	18.3	11.4	12.3	84.7	80.9
Bloomfield	276	211	24	10.3	10.2	7.9	7.2	87.0	41.4
Bridgeton	378	279	26	26.3	23.6	19.4	16.5	68.8	82.4
Camden	3,046	1,768	264	23.3	24.1	13.5	13.8	86.7	87.2
Carteret	243	95	21	16.1	20.4	6.3	5.4	86.4	77.2
Clifton	568	224	34	15.7	15.8	6.2	6.1	59.9	51.0
East Orange	301	451	19	4.9	4.7	7.3	7.6	63.1	67.4
Elizabeth	2,531	1,308	197	([4])	([4])	([4])	([4])	77.8	59.6
Englewood	631	278	37	49.3	47.6	21.7	21.7	58.6	66.7
Garfield	589	160	39	23.1	20.9	6.3	5.7	66.2	66.5
Gloucester	210	128	18	14.3	17.1	8.7	8.7	85.7	102.6
Hackensack	835	417	43	41.5	48.2	20.7	21.3	51.5	61.1
Harrison	289	132	30	17.5	18.4	8.0	8.8	103.8	82.8
Hoboken	1,250	898	89	([4])	19.5	([4])	13.3	71.2	[illegible]
Irvington	613	371	33	17.7	18.0	10.7	9.9	53.8	71.0
Jersey City	6,926	3,802	463	21.8	21.9	12.0	11.7	66.8	68.2
Kearny	560	301	31	17.4	17.1	9.4	9.1	55.4	63.7
Long Branch	636	462	47	46.4	44.9	33.7	34.6	73.9	85.1
Millville	300	195	26	18.5	18.9	12.0	11.4	86.7	82.5
Montclair	324	302	23	9.6	11.0	9.0	8.8	71.0	88.2
Morristown	592	375	43	47.0	45.4	29.8	28.6	72.6	90.9
New Brunswick	1,022	572	67	26.3	25.8	14.7	13.0	65.6	61.3
Newark	10,473	5,464	736	22.8	24.0	11.9	11.7	70.3	67.6
Orange	1,760	631	88	49.2	50.3	17.6	17.5	50.0	50.0
Passaic	1,600	725	89	22.0	25.6	10.4	10.5	55.6	66.3
Paterson	2,905	1,830	187	20.3	21.7	12.8	12.0	64.4	63.1
Perth Amboy	985	486	83	20.5	23.0	10.1	10.3	84.3	98.7

[4] Population not estimated.

Births and deaths (exclusive of stillbirths), with rates per 1,000 population, and infant mortality, in the birth registration area in continental United States, 1926—Continued

Area	Number, 1926			Rate per 1,000 population				Deaths under 1 year per 1,000 births	
	Births	Deaths		Births		Deaths			
		All ages	Under 1 year	1926	1925	1926	1925	1926	1925
REGISTRATION CITIES—contd.									
New Jersey—Continued.									
Phillipsburg	358	247	29	13.9	21.6	13.1	11.0	81.0	69.8
Plainfield	958	467	57	29.5	29.0	14.4	13.5	59.5	64.2
Rahway	251	174	15	20.6	24.2	14.3	14.5	59.8	55.0
Summit	324	192	16	27.0	27.4	16.0	14.4	49.4	50.0
Trenton	2,942	1,890	228	22.9	23.3	14.1	14.2	77.5	79.8
Union City [5]	1,035	468	44	16.3	17.1	7.4	6.6	42.5	37.9
West New York	628	223	28	15.4	17.3	5.5	5.7	44.6	51.6
West Orange	161	114	15	8.7	8.4	6.1	7.0	93.2	45.8
New York:									
Albany	2,501	1,939	152	21.0	21.4	16.7	15.7	60.8	75.5
Amsterdam	713	437	57	20.0	23.6	12.3	11.1	79.9	70.9
Auburn	640	525	46	(4)	21.7	(4)	14.4	71.9	73.6
Batavia	514	317	33	32.1	30.4	19.8	17.1	64.2	63.2
Beacon	173	203	8	14.7	13.7	17.2	13.6	46.2	44.0
Binghamton	1,468	1,225	108	20.1	21.0	16.8	14.7	73.6	71.4
Buffalo	12,371	7,779	1,037	22.7	23.2	14.3	13.8	83.8	80.3
Cohoes	459	319	42	19.6	20.4	13.6	12.5	91.5	79.8
Corning	346	240	27	22.0	24.9	15.6	11.8	78.0	45.9
Cortland	341	259	20	24.4	26.3	18.5	19.5	58.7	65.8
Dunkirk	443	238	32	22.2	21.3	11.9	11.1	72.2	63.5
Elmira	1,014	810	106	20.7	21.9	16.5	15.2	104.5	83.2
Fulton	296	170	28	23.5	26.6	13.5	14.1	94.6	50.7
Geneva	349	226	23	21.5	25.2	14.0	13.1	65.9	74.8
Glens Falls	407	350	25	22.5	21.6	19.3	17.5	61.4	80.5
Gloversville	387	407	27	17.5	16.7	18.4	16.8	69.8	64.9
Herkimer	249	132	12	22.6	23.3	12.0	12.0	48.2	63.0
Hornell	296	218	24	18.6	18.8	13.7	12.8	81.1	54.1
Hudson	400	281	32	33.9	34.6	23.8	24.5	80.0	100.7
Ilion	164	129	7	15.6	15.5	12.3	11.6	42.7	74.1
Ithaca	428	355	34	22.2	21.2	18.4	15.6	79.4	72.3
Jamestown	911	574	50	20.6	23.3	13.0	12.1	54.9	64.3
Johnstown	116	153	11	10.8	12.0	14.3	10.5	94.8	62.0
Kingston	558	526	41	19.6	20.9	18.5	19.5	73.5	83.3
Lackawanna	929	373	105	44.9	45.9	18.0	17.1	113.0	119.6
Little Falls	223	157	15	17.9	20.1	12.6	13.6	67.3	72.0
Lockport	487	305	28	22.4	21.5	14.1	15.1	57.5	81.0
Middletown	353	436	24	17.0	16.2	21.0	20.0	68.0	69.7
Mount Vernon	1,055	546	53	20.3	20.4	10.5	9.0	50.2	41.7
New Rochelle	859	465	60	18.8	19.7	10.2	8.6	69.8	46.0
New York	124,830	76,053	8,417	21.1	21.8	12.8	12.2	67.4	64.8
Newburgh	659	502	40	21.7	20.9	16.5	16.5	60.7	69.2
Niagara Falls	1,562	688	145	26.8	27.7	11.8	12.0	92.8	84.9
North Tonawanda	402	211	35	22.7	23.7	11.9	11.0	87.1	70.6
Ogdensburg	406	506	45	23.2	25.1	28.9	25.3	110.8	109.8
Olean	596	333	44	27.9	25.5	15.6	13.1	73.8	90.9
Oneida	253	181	11	23.6	21.8	16.9	15.3	43.5	64.7
Oneonta	253	184	17	20.7	22.1	15.1	15.6	67.2	82.7
Ossining	271	188	14	20.5	22.3	14.2	14.2	51.7	45.6
Oswego	430	329	38	19.2	20.7	14.7	12.7	88.4	67.1
Peekskill	313	214	23	17.0	16.7	11.6	11.9	73.5	46.5
Plattsburg	321	256	28	27.4	29.2	21.9	19.9	87.2	100.9
Port Chester	685	265	32	34.6	30.1	13.4	10.1	46.7	51.7
Port Jervis	217	182	17	20.5	20.2	17.2	16.4	78.3	89.6
Poughkeepsie	723	605	75	20.2	18.9	16.9	14.0	103.7	[illegible]

[4] Population not estimated.
[5] Union and West Hoboken consolidated as Union City, June, 1925.

Births and deaths (exclusive of stillbirths), with rates per 1,000 population, and infant mortality, in the birth registration area in continental United States, 1926—Continued

Area	Number, 1926			Rate per 1,000 population				Deaths under 1 year per 1,000 births	
	Births	Deaths		Births		Deaths			
		All ages	Under 1 year	1926	1925	1926	1925	1926	1925
REGISTRATION CITIES—contd.									
New York—Continued.									
Rensselaer	91	118	12	7.9	7.8	10.3	8.6	131.9	67.4
Rochester	6,160	4,109	415	19.2	20.8	12.8	12.1	67.4	64.4
Rome	684	550	64	22.0	22.7	17.7	15.9	93.6	84.2
Saratoga Springs	303	298	19	21.6	21.0	21.3	21.7	62.7	61.6
Schenectady	1,735	1,087	124	18.7	19.6	11.7	11.4	71.5	68.2
Syracuse	3,996	2,513	277	21.6	22.6	13.6	12.6	69.3	68.0
Tonawanda	213	110	16	18.5	22.1	9.6	8.9	75.1	104.4
Troy	1,416	1,304	112	19.6	20.6	18.0	18.7	79.1	98.3
Utica	2,237	1,680	182	21.7	22.5	16.3	14.9	81.4	75.1
Watertown	774	551	68	23.4	26.0	16.6	16.4	87.9	78.4
Watervliet	178	173	16	11.0	13.2	10.7	11.4	89.9	84.5
White Plains	706	325	35	24.6	21.3	11.3	11.4	49.6	51.3
Yonkers	2,266	1,215	170	19.5	20.4	10.5	10.1	75.0	68.6
North Dakota:									
Fargo	856	338	71	33.4	32.7	13.2	12.2	82.9	41.7
Grand Forks	494	202	24	32.1	32.9	13.1	10.0	48.6	34.1
Minot	356	244	22	28.0	24.4	19.2	17.6	61.8	93.6
Ohio:									
Akron	4,793	2,060	392	(4)	(4)	(4)	(4)	81.8	64.1
Alliance	461	298	27	18.0	17.6	11.6	11.2	58.6	68.2
Ashtabula	525	333	40	20.0	23.6	13.1	11.9	76.2	54.1
Barberton	573	233	40	23.8	24.1	9.7	8.8	69.8	85.4
Bellaire	323	181	19	19.6	21.7	11.0	10.7	58.8	59.3
Bucyrus	174	129	16	14.5	17.5	10.8	12.7	92.0	43.9
Cambridge	315	204	21	22.2	21.1	14.4	15.1	66.7	70.9
Campbell[6]	402	108	38	24.2	26.4	6.5	7.2	94.5	134.8
Canton	2,167	1,142	197	19.7	22.4	10.4	10.5	90.9	75.8
Chillicothe	372	262	20	22.1	26.1	15.6	14.2	53.8	64.5
Cincinnati	8,616	7,103	764	21.0	20.5	17.3	16.0	88.7	77.3
Cleveland	19,476	10,641	1,398	20.3	21.4	11.1	10.4	71.8	66.0
Cleveland Heights	59	235	5	2.5	2.2	10.0	9.3	84.7	142.9
Columbus	5,610	3,967	423	19.7	19.9	13.9	13.9	75.4	80.0
Coshocton	218	176	16	18.6	23.0	15.0	12.2	73.4	41.2
Cuyahoga Falls	262	108	12	18.3	17.8	7.6	8.0	45.8	32.8
Dayton	3,155	2,160	264	17.8	18.3	12.2	11.3	83.7	57.1
East Cleveland	111	248	6	2.8	3.1	6.3	5.6	54.1	51.7
East Liverpool	607	377	57	27.5	26.5	17.1	16.8	93.9	72.2
Elyria	505	293	29	20.7	23.3	12.0	11.4	57.4	57.8
Findlay	420	287	31	22.7	22.5	15.5	14.7	73.8	56.2
Fremont	200	152	17	14.1	15.0	10.7	8.7	85.0	50.7
Hamilton	1,245	597	89	29.1	28.3	13.9	13.6	71.5	74.0
Ironton	362	269	48	22.9	27.5	17.0	15.7	132.6	80.2
Kenmore	369	89	23	18.0	20.1	4.3	5.4	62.3	61.7
Lakewood	643	469	31	10.8	11.8	7.9	7.6	48.2	46.1
Lancaster	325	202	25	19.7	21.9	12.2	12.9	76.9	94.3
Lima	996	533	50	20.9	23.0	11.2	12.5	50.2	69.8
Lorain	1,060	432	89	24.6	23.3	10.0	9.9	84.0	74.1
Mansfield	616	439	40	19.0	19.6	13.5	12.3	64.9	77.2
Marietta	289	227	26	18.9	19.4	14.8	12.7	90.0	74.1
Marion	606	384	53	18.1	19.3	11.5	10.2	87.5	55.9
Martins Ferry	336	207	23	21.3	23.7	13.1	13.9	68.5	81.5
Massillon	578	262	36	21.6	24.2	9.8	12.5	62.3	47.1
Middletown	866	339	65	27.1	27.4	10.6	9.3	75.1	62.9
New Philadelphia	243	139	23	20.3	25.1	11.4	8.3	92.7	83.2
Newark	539	383	39	17.6	18.6	12.5	12.4	72.4	56.3
Niles	280	122	30	16.4	15.8	7.1	6.4	107.1	91.6
Norwood	177	233	10	5.7	6.9	7.6	6.0	56.5	43.9
Piqua	310	272	27	19.1	18.7	16.8	14.3	87.1	80.2

[4] Population not estimated.

[6] Name changed from East Youngstown, April, 1926.

Births and deaths (exclusive of stillbirths), with rates per 1,000 population, and infant mortality, in the birth registration area in continental United States, 1926—Continued

Area	Number, 1926			Rate per 1,000 population				Deaths under 1 year per 1,000 births	
	Births	Deaths		Births		Deaths			
		All ages	Under 1 year	1926	1925	1926	1925	1926	1925
REGISTRATION CITIES—contd.									
Ohio—Continued.									
Portsmouth	1,115	608	112	28.0	26.8	15.3	13.5	100.4	97.5
Salem	264	190	17	23.6	25.6	17.0	15.9	64.4	49.3
Sandusky	489	336	27	19.7	20.0	13.5	13.0	55.2	59.3
Springfield	1,181	881	97	16.8	18.9	12.5	13.0	82.1	76.9
Steubenville	701	504	81	21.5	23.5	15.5	14.4	115.5	113.2
Tiffin	330	231	18	20.9	20.4	11.6	14.3	54.5	47.2
Toledo	5,473	3,732	448	18.6	18.9	12.7	12.2	81.9	80.9
Warren	966	499	81	26.8	25.5	13.8	13.3	83.9	82.5
Youngstown	3,902	1,772	332	23.6	35.8	10.7	10.7	85.1	73.6
Zanesville	822	582	63	26.9	25.7	19.0	16.8	76.6	74.3
Oregon:									
Astoria	207	147	9	12.2	15.0	8.6	8.4	43.5	72.9
Eugene	518	277	21	45.0	39.6	24.1	24.0	40.5	59.9
Portland	4,859	3,376	188	(4)	(4)	(4)	(4)	38.7	46.1
Salem	460	599	18	22.9	20.1	29.8	33.7	39.1	55.6
Pennsylvania:									
Allentown	1,847	1,428	162	19.5	20.7	15.1	13.9	87.7	92.1
Altoona	1,700	880	127	25.4	25.6	13.1	12.3	74.7	83.8
Ambridge	408	141	46	22.9	24.5	7.9	6.5	112.7	67.1
Beaver Falls	348	223	23	26.4	26.4	16.9	16.3	66.1	115.6
Berwick	296	157	24	20.7	20.8	11.0	9.2	81.1	54.1
Bethlehem	1,102	537	97	17.1	19.4	8.3	6.7	88.0	76.4
Braddock	616	330	61	28.1	33.8	15.1	14.9	99.0	92.8
Bradford	408	241	20	25.8	27.5	15.3	16.0	49.0	73.2
Bristol	344	123	15	26.5	26.3	9.5	10.4	43.6	83.1
Butler	471	188	26	18.5	20.8	7.4	12.3	55.2	91.4
Canonsburg	323	126	27	23.1	24.2	9.0	8.4	83.6	67.3
Carbondale	565	313	53	28.7	28.3	15.9	16.4	93.8	116.2
Carlisle	260	198	22	22.6	26.0	17.2	15.7	84.6	54.1
Carnegie	290	115	27	28.2	21.6	9.2	6.9	93.1	59.7
Carrick	235	90	16	17.5	16.1	6.7	7.8	68.1	71.8
Chambersburg	293	223	24	20.8	21.5	15.8	15.3	81.9	66.9
Charleroi	243	94	23	19.0	23.0	7.3	6.9	94.7	62.1
Chester	1,371	810	127	18.1	18.8	11.5	10.9	99.9	104.9
Coatesville	239	129	17	14.2	15.4	7.7	8.0	71.1	86.6
Columbia	248	159	10	22.9	25.4	14.7	14.7	40.3	80.0
Connellsville	283	170	25	19.7	22.2	11.8	11.1	88.3	75.5
Dickson City	297	93	24	24.3	20.2	7.6	8.8	80.8	98.7
Donora	390	76	31	22.2	23.4	4.3	7.1	79.5	95.5
Du Bois	274	162	24	19.0	22.4	11.3	12.2	87.6	87.2
Dunmore	418	271	62	19.0	21.2	12.3	11.9	148.3	135.1
Duquesne	556	184	58	26.2	26.1	8.7	7.6	104.3	82.0
Easton	775	615	66	20.7	23.1	17.2	17.4	85.2	81.1
Erie	2,453	1,509	218	(4)	(4)	(4)	(4)	88.9	64.8
Farrell	361	131	35	18.8	22.1	6.8	6.3	97.0	70.0
Greensburg	449	280	26	27.7	27.3	17.3	16.3	57.9	68.3
Harrisburg	1,532	1,366	133	18.1	19.3	16.1	14.1	86.8	82.1
Hazleton	965	454	67	26.2	28.4	12.3	13.5	69.4	90.6
Homestead	575	235	53	26.6	26.2	10.9	11.9	92.2	89.3
Jeannette	363	128	26	22.8	32.4	8.1	10.2	71.6	81.8
Johnstown	2,215	1,035	184	30.7	30.5	14.3	14.3	83.1	87.6
Lancaster	1,457	1,006	93	25.5	20.1	17.6	17.0	63.8	88.8
Lebanon	562	394	34	22.2	23.4	15.6	14.0	60.5	61.1
McKeesport	1,294	722	113	26.1	27.1	14.6	14.1	87.3	81.2
McKees Rocks	406	136	39	22.2	25.6	7.4	7.6	96.1	69.0
Mahanoy City	328	160	39	21.0	22.9	10.6	13.1	118.9	126.1

(4) Population not estimated.

Births and deaths (exclusive of stillbirths), with rates per 1,000 population, and infant mortality, in the birth registration area in continental United States, 1926—Continued

Area	Number, 1926			Rate per 1,000 population				Deaths under 1 year per 1,000 births	
	Births	Deaths		Births		Deaths			
		All ages	Under 1 year	1926	1925	1926	1925	1926	1925
REGISTRATION CITIES—contd.									
Pennsylvania—Continued.									
Meadville	363	290	20	23.0	25.0	18.9	17.3	79.9	82.1
Monessen	573	134	34	26.3	26.4	6.1	5.8	59.3	71.4
Mount Carmel	476	183	44	27.2	28.9	10.5	10.3	92.4	87.1
Nanticoke	683	351	47	27.2	30.0	14.0	14.8	68.8	108.0
New Castle	1,290	616	94	25.4	26.5	12.1	11.8	72.9	71.2
New Kensington	447	206	31	30.0	30.9	13.8	15.3	69.4	62.9
Norristown	767	797	88	21.7	23.6	22.6	20.2	114.7	104.6
North Braddock	424	125	34	24.9	23.2	7.4	7.0	80.2	59.4
Oil City	508	255	32	21.5	24.2	10.8	11.6	63.0	65.5
Old Forge	311	115	43	24.3	27.7	9.0	8.8	138.3	107.0
Olyphant	253	96	33	22.2	21.6	8.4	10.1	130.4	74.4
Philadelphia	38,627	27,665	3,007	19.2	19.8	13.8	13.2	77.8	76.8
Phoenixville	306	178	28	29.2	27.3	17.0	14.1	91.5	80.4
Pittsburgh	15,005	9,002	1,236	23.6	24.9	14.1	14.8	82.4	81.5
Pittston	495	195	34	24.8	29.0	9.8	12.5	68.7	120.2
Plymouth	396	168	40	24.0	27.4	10.2	9.8	101.0	86.3
Pottstown	363	274	29	19.4	22.4	14.7	14.8	79.0	108.4
Pottsville	565	516	76	24.6	25.1	22.4	20.4	134.5	108.4
Punxsutawney	211	170	27	18.8	20.3	15.2	13.2	128.0	80.7
Reading	2,244	1,440	171	19.7	20.0	12.6	13.0	76.2	79.6
Scranton	3,087	1,885	240	21.6	22.3	13.2	13.8	77.7	87.5
Shamokin	488	222	57	22.4	23.5	10.2	9.4	116.8	72.7
Sharon	642	369	59	25.2	24.3	14.5	11.3	91.9	59.3
Shenandoah	548	249	59	22.2	25.1	10.1	11.6	107.7	145.2
Steelton	286	161	32	21.3	23.0	12.0	10.7	111.9	64.7
Sunbury	335	198	27	19.7	21.8	11.6	10.7	80.6	40.9
Swissvale	189	101	11	14.2	15.3	7.6	9.5	58.2	55.6
Tamaqua	262	119	29	18.3	18.7	8.3	8.7	110.7	61.1
Uniontown	544	371	33	34.7	27.3	23.6	21.6	60.7	84.1
Warren	401	224	27	26.2	24.8	14.6	15.3	67.3	40.0
Washington	562	421	80	24.1	29.3	18.1	17.2	142.3	99.3
West Chester	361	337	35	30.8	32.7	28.8	26.6	97.0	133.2
Wilkes-Barre	2,282	1,242	181	29.1	29.3	15.9	15.1	79.3	81.0
Wilkinsburg	571	359	38	20.4	21.6	12.8	12.9	66.5	40.6
Williamsport	1,045	667	75	24.2	23.8	15.5	13.3	71.8	96.3
Woodlawn	543	137	44	7.2	28.3	6.9	6.5	81.0	76.6
York	1,073	750	81	21.7	21.4	15.2	15.0	75.5	92.4
Rhode Island:									
Bristol town	190	153	29	14.6	19.7	11.8	11.1	152.6	88.0
Central Falls	621	287	56	24.2	21.8	11.2	8.7	90.2	88.3
Cranston	445	717	36	12.5	16.7	20.1	18.6	80.9	59.2
Cumberland town	189	117	23	18.3	17.1	11.4	9.7	121.7	91.4
East Providence town	423	313	49	15.6	17.9	11.5	10.3	115.8	87.8
Newport	480	374	25	([4])	17.3	([4])	14.3	52.1	54.3
Pawtucket	1,447	869	138	20.4	21.1	12.2	12.8	95.4	97.0
Providence	6,070	3,544	416	22.1	23.4	12.9	12.4	68.5	63.5
Warwick town	277	202	21	14.3	15.1	10.4	10.9	75.8	72.6
West Warwick town	369	198	40	19.6	20.9	10.5	10.3	108.4	84.2
Woonsocket	1,259	599	129	24.6	28.9	11.7	10.5	102.5	87.1
Virginia:									
Alexandria	505	287	51	27.3	27.0	15.5	16.4	101.0	110.2
Charlottesville	187	128	11	16.5	25.4	11.8	12.9	58.8	95.1
Danville	589	334	55	25.4	26.9	14.4	14.8	93.4	116.3
Lynchburg	1,081	628	109	28.1	24.0	16.3	17.1	100.8	93.0
Newport News	534	398	57	10.9	12.4	8.2	7.5	106.7	87.6

[4] Population not estimated.

Births and deaths (exclusive of stillbirths), with rates per 1,000 population, and infant mortality, in the birth registration area in continental United States, 1926— Continued

Area	Number, 1926			Rate per 1,000 population				Deaths under 1 year per 1,000 births	
	Births	Deaths		Births		Deaths			
		All ages	Under 1 year	1926	1925	1926	1925	1926	1925
REGISTRATION CITIES—contd.									
Virginia—Continued.									
Norfolk	2,510	1,867	226	14.4	15.3	10.7	10.5	90.0	96.8
Petersburg	626	593	86	17.2	19.7	16.3	15.1	137.4	124.8
Portsmouth	930	698	101	15.5	17.1	11.6	10.9	108.6	95.3
Richmond	4,004	3,035	430	21.2	22.5	16.1	14.7	107.4	90.5
Roanoke	1,810	965	187	29.2	30.5	15.6	14.4	103.3	93.4
Staunton	167	309	26	15.8	14.4	29.2	26.3	155.7	104.6
Washington:									
Aberdeen	418	235	23	25.6	24.4	14.4	15.3	55.0	53.0
Bellingham	608	368	36	23.1	25.9	14.0	14.6	59.2	50.1
Everett	585	380	31	19.8	20.3	12.8	11.4	53.0	48.8
Hoquiam	251	107	18	22.2	19.3	9.5	10.4	71.7	70.1
Seattle	4,881	3,564	228	(4)	(4)	(4)	(4)	46.7	44.9
Spokane	2,167	1,514	142	19.9	20.6	13.9	12.7	65.5	54.7
Tacoma	2,220	1,285	108	20.9	21.2	12.1	12.0	48.6	44.0
Vancouver	312	158	12	20.9	20.6	10.6	10.8	38.5	43.6
Walla Walla	304	233	14	19.6	19.4	15.0	13.0	46.1	73.3
Yakima	680	349	61	29.4	27.4	15.1	15.3	89.7	77.3
West Virginia.									
Bluefield	469	281	53	23.7	30.6	14.2	13.5	113.0	104.3
Charleston	1,336	851	135	26.4	28.6	16.8	16.5	101.0	97.1
Clarksburg	766	380	53	24.8	30.3	12.3	12.5	69.2	71.7
Fairmont	574	332	45	26.7	26.0	15.4	14.5	78.4	75.1
Huntington	1,681	906	170	25.7	26.3	13.9	15.4	101.1	109.8
Martinsburg	384	231	47	28.0	26.1	16.9	20.0	122.4	155.8
Morgantown	442	224	33	31.3	37.6	15.9	16.7	74.7	80.9
Moundsville	345	156	28	29.2	31.8	13.2	12.1	81.2	61.8
Parkersburg	578	410	60	26.9	23.2	19.1	14.5	103.8	85.0
Wheeling	1,458	948	126	(4)	29.1	(4)	17.8	86.4	83.6
Wisconsin:									
Appleton	499	300	30	23.3	24.7	14.0	12.8	60.1	72.9
Ashland	290	219	27	25.6	28.3	19.3	23.2	93.1	77.9
Beloit	487	268	38	19.2	21.7	10.6	10.4	78.0	79.9
Eau Claire	622	372	43	27.5	30.5	16.5	17.2	69.1	57.1
Fond du Lac	676	394	53	25.5	27.6	14.9	15.3	78.4	68.2
Green Bay	1,035	600	84	29.7	28.3	17.2	15.7	81.2	75.3
Janesville	415	254	28	19.6	19.7	12.0	12.2	67.5	65.9
Kenosha	1,015	416	78	19.3	21.9	7.9	7.6	76.8	55.6
La Crosse	975	615	63	32.1	31.5	20.2	17.1	64.6	54.3
Madison	1,298	746	85	27.3	27.0	15.7	12.9	65.5	43.2
Manitowoc	512	260	49	22.7	24.1	11.8	10.5	95.7	69.4
Marinette	273	184	20	20.1	25.0	13.5	12.6	73.3	76.5
Milwaukee	11,339	5,730	856	21.9	21.7	11.1	10.9	75.5	81.5
Oshkosh	820	496	46	24.7	23.4	14.9	13.0	56.1	45.0
Racine	1,342	660	108	19.3	20.3	9.5	8.4	80.5	62.0
Sheboygan	809	365	59	23.8	25.4	10.7	11.9	72.9	62.3
Stevens Point	320	172	26	24.2	25.0	13.0	10.8	81.3	71.2
Superior	759	417	50	(4)	19.6	(4)	11.5	65.9	57.8
Waukesha	329	205	25	21.8	22.7	13.0	9.9	76.0	62.9
Wausau	605	279	49	29.8	30.5	13.7	12.8	81.0	76.7
West Allis	459	154	28	23.9	24.1	8.0	7.3	61.0	85.6
Wyoming:									
Casper	501	191	31	(4)	(4)	(4)	(4)	61.9	54.0
Cheyenne	353	147	36	22.5	25.4	9.4	11.4	102.0	45.7

[4] Population not estimated.

COURT DECISION RELATING TO PUBLIC HEALTH

Milk ordinance construed.—(Georgia Supreme Court; Leontas *v.* Mayor and Aldermen of City of Savannah, 138 S. E. 154; decided May 5, 1927.) An ordinance of the city of Savannah authorized the health officer to adopt and publish such regulations as he deemed proper and necessary to insure the suitableness for consumption as human food of all milk and cream intended for consumption in the city, and to prohibit within the city the sale of milk or cream contrary to such regulations. The ordinance also empowered the health officer, if upon inspection he found conditions to be such as, in his opinion, rendered milk or cream unsuitable or unsafe for human food and warranted its exclusion from sale in the city, to absolutely prohibit the sale thereof until such time as the reason for the exclusion had, in his opinion, ceased. In a case involving the said ordinance, the supreme court held that a provision in the ordinance that "the action of the health officer hereunder [to] be subject to the approval of the sanitary board" referred to regulations which the ordinance authorized the health officer to make, and did not refer to the power conferred upon him to exclude from sale milk or cream which he found upon inspection to be unsuitable or unsafe for human food. The court stated that "This [latter] power is conferred directly by the mayor and council of the city upon this officer by this ordinance, and the same does not require the approval of the sanitary board before it can be exercised by the health officer."

PUBLIC HEALTH ENGINEERING ABSTRACTS

Report of the Committee on Methods for the Bacterial Analyses of Milk and Milk Products.—John W. Rice, chairman, D. W. Horn, and G. W. Ramsey. Third Annual Report (1927) Pennsylvania Association of Dairy and Milk Inspectors, Harrisburg, Pa., pp. 72 76. (Abstract by Ralph E. Irwin.)

The results obtained by the use of one type of methylene blue apparatus used by the milk industry to determine the quality of market milk were compared with actual bacterial counts which were run in parallel. Standard methods of milk analyses were used.

Conclusions: "(1) The grades or class designations of milk, as proposed for the milk grader, are entirely too large to enable public health officials to control a city milk supply under standards such as are defined by the Model Milk Ordinance of the State; (2) the inconsistencies which exist between the time to decolorization of methylene blue and the plate counts reveal the fact that it is not so much the number of bacteria which are present in the milk as it is the predominating kind of bacteria which is suggested by the grading tests; (3) there seems to be no short-cut, royal road to efficient control of market milk in an up-to-date community. To the best of our knowledge there is only one substitute for the services of a trained bacteriologist in milk-control work, and that is another well-trained and efficient bacteriologist."

Report of the Committee on Hygiene and Dairy Methods.—C. I. Cohee, chairman, C. R. Hostetter, H. B. Mitchell, W. A. Morgan, and H. B. Steele. Third Annual Report (1927) Pennsylvania Association of Dairy and Milk Inspectors, Harrisburg, Pa., pp. 112-113.

"The committee recognizes the need of a greater uniformity of milk regulations throughout the Commonwealth.

"The committee recommends: (1) That in order adequately to supervise the Pasteurization of milk within the Commonwealth, the operators of Pasteurizing plants be required to take an examination given by the Pennsylvania State College and demonstrate their efficiency in the processes of Pasteurization before they be permitted to operate such a plant within the State; (2) that the Director of Public Health of the State of Pennsylvania conduct investigations leading to the approval of satisfactory types of Pasteurizing equipment, and that as rapidly as possible the dealers be required to discontinue the use of equipment that is not satisfactory; (3) that, so far as possible, all dairy-barn score cards, milk-plant score cards, and other material used in milk-inspection work be uniform; (4) that a high standard be required and maintained in the ranks of those who are responsible for sanitary milk-control work, and that the inspectors be required to pass an examination demonstrating their fitness for the position."

Report of Committee on Pasteurization.—R. E. Irwin, W. Englert, G. W. Grim, J. J. Skelly, and C. W. Selemeyer. Third Annual Report (1927) Pennsylvania Association of Dairy and Milk Inspectors, pp. 143-164. (Abstract by F. J. Moss.)

Short accounts are given of municipal cooperation in employment of milk inspectors of the increase in the tuberculin testing of dairy cattle under the Official Modified Accredited Area Plan, and of the present record of departments of our National Government with respect to the definition of Pasteurized milk.

On September 10, 1925, the Reick-McJunkin Dairy Co., of Pittsburgh, requested permission of the Pennsylvania Department of Health to use the Electropure Process of milk treatment. The secretary of health appointed a committee to investigate the efficiency of the process, and on April 13, 1926, the committee report was presented. This report gave a description of the apparatus used and a record of the results obtained in the experimental plant operated in the East Liberty plant of the Rieck-McJunkin Dairy Co. Milk inoculated with *B. diphtheriæ*, *B. typhosus*, and hemolytic streptococcus, *B. tuberculosis* (bovine and human), *B. coli*, and *B. aerogenes* was used in measuring the efficiency of the process. Temperatures of 150° F., 155° F., and 160° F., were used, and the retention period in the electric heater varied between 8 and 10 seconds. Sections are quoted from that part of the report giving a description of the construction and operation of the equipment.

The conclusions and recommendations of the committee are stated in full, and it was their opinion, based upon results of experimental work, that the process was a reasonably safe method for the Pasteurization of milk, and merited a thorough trial under commercial conditions, as well as continued investigation as to its efficiency in destroying the tubercle bacillus.

On December 21, 1926, the committee submitted its final report. This report gives the results of experimental work with *B. coli* and *B. tuberculosis*. The construction and operation of the experimental plant were the same as described in the committee report submitted April 13, 1926. Observations on the commercial use of the Electropure Process were made in the Thirtieth Street plant and the Charleroi plant of the Rieck-McJunkin Dairy Co. Samples of treated and untreated milk were collected to determine the total number of bacteria and of *B. coli* present. Samples were also collected from the Forbes Street plant of

the Rieck-McJunkin Dairy Co. to show the results obtained by the heating of milk to 145° F. for 30 minutes in one type of horizontal coil vat Pasteurizer.

It was the conclusion of the committee that the results of the work set forth in the final report confirmed the opinion given in the former report, namely, that the method known as the Electropure Process was a reasonably safe method for the Pasteurization of milk. The bacteriological results obtained in a study of the process under commercial conditions confirm this opinion and support the findings obtained under experimental conditions.

The recommendations contained in this report are listed and are essentially the same as those given in the first report. On December 21, 1926, the Advisory Health Board approved the report of the committee with the exception of the recommendation which pertained to the approval of the process, but agreed to allow the restricted use of the process under permit.

A description is given of the process of viscolizing milk, together with an agreement form used in promoting the use of the process. It is claimed that this product is more digestible and more easily assimilated. A bottle of milk with a large cream separation is obtained, due to the fact that the cream is of greater volume per percentage of butterfat than unviscolized cream. A statement issued by the director and chief chemist, bureau of foods and chemistry, Pennsylvania Department of Agriculture, outlines the position of the State officials, as follows: "This sale of so-called viscolized milk, as recently adopted by certain distributors, is declared by the officials of the Pennsylvania Department of Agriculture to be unlawful and a fraud on the consumers of milk." The position taken by the Pennsylvania Department of Agriculture in reference to the sale of so-called viscolized milk is approved by the secretary of health, Pennsylvania Department of Health.

A list is given of inspection points to be observed by milk-plant inspectors, and data are given which were obtained from the inspection of 300 milk-treatment plants.

A State-wide Milk Survey.—Frank C. Wilson, Director, Milk Laboratory. Monthly Bulletin, Indiana State Board of Health, volume 30, No. 3, March, 1927, pp. 37–38. (Abstract by H. A. Whittaker.)

The author outlines the information collected during a survey of the milk supplies of practically every city in the State with a population of 500 or more. The information procured covered the following points: (*a*) Total consumption of milk; (*b*) amount of milk Pasteurized; (*c*) amount of milk raw; (*d*) source of supply, that is, proportion direct from producers and from central plants; (*e*) types of Pasteurizers employed; (*f*) whether or not recording thermometers are used on Pasteurizers; (*g*) clarification and filtration of milk; (*h*) is milk ordinance in effect; (*i*) by whom is ordinance enforced; (*j*) provisions of ordinance, such as licensing of milk dealers, requirements for Pasteurization and tuberculin testing, standards for milk, and physical examinations of dairy workers, etc. The information given in this article includes a report on cities of 50,000 or more inhabitants. In next month's bulletin will be reported the information on the second group of cities—those of 25,000 to 50,000 inhabitants.

The author states that the information obtained on the cities of this first group is very encouraging, showing on the whole reasonably satisfactory conditions of the milk supplies.

Oyster Investigation.—Report of Bureau of Sanitary Engineering, Maryland State Department of Health, 1926. 19 pages. (Abstract by I. W. Mendelsohn.)

The study of the oyster-bearing waters and oyster-shucking and packing houses was continued. Tentative conclusions from the investigations are: (1) No correlation exists between water score and oyster score; (2) high oyster

scores occur in excellent overlying waters and in the absence of any sanitary conditions to justify them; (3) the oyster scores vary with the water temperatures, regardless of location, intensity of pollution, or tidal influences; (4) until more definite knowledge is obtained as to the exact significance of the oyster score, sanitary survey and quality of water overlying shellfish beds offer the only consistent criteria for administrative guidance.

Special studies on chlorination of shell and shucked oysters started at one of the local packing houses in December, 1925, were continued during the early part of 1926.

The Prevalence and Epidemiology of Hookworm and Other Helminthic Infections in India. Part VI: Burma.—Asa C. Chandler. Indian Journal of Medical Research, volume 14, No. 3, January, 1927, pp. 733–744. (Abstract by N. R. Stoll.)

The Province of Burma, on the Bay of Bengal, bordered on the east by Yunnan (China) and Siam, is of quite varied topography and climate, has a total area of 233,707 square miles (slightly smaller than Texas) and a total population of over 13,000,000 (average density 57 per square mile), made up of many different races of people of widely different origins.

The amount of hookworm infection varies a great deal in different parts of Burma—in the 10 different localities studied, from 18 per cent incidence, with an average egg count of all examined of 21 per gram, to 100 per cent in two areas each of which showed about 1,380 eggs per gram. These rank as very distinctly low average infections. Of the 741 stools examined, about 29 per cent were negative, 22 per cent showed less than 100 eggs per gram, and 34 per cent from 100 to 500 eggs per gram. The climate of all parts of Burma, except a central dry zone (in which live about a third of the people of the Province, and these have practically no hookworm), is somewhat more favorable for hookworm propagation than is that of Bengal. There are about eight favorable months. The use of latrines by the native peoples holds down the infection. The hookworm species involved are not only *N. americanus* and *A. doudenale*, but also *A. braziliense*.

Ascaris infections in the 10 groups studied range in incidence from 3 to 83 per cent, and *Trichuris* from 0 to 86 per cent. Two stools, presumably human, contained *Gnathostoma* eggs. No fluke infections were encountered in 1 to 2 per cent of the people, but *Taenia* infections were fairly common in one group.

The Prevalence and Epidemiology of Hookworm and Other Helminthic Infections in India. Part VII: Bihar and Orissa.—Asa C. Chandler. Indian Journal of Medical Research, volume 14, No. 3, January, 1927, pp. 745–759. (Abstract by N. R. Stoll.)

The Province of Bihar and Orissa, in northeastern India, extends for about 500 miles from the foothills of the Himalayas on the north to the Province of Madras and the Bay of Bengal on the south. It covers an area of 111,809 square miles (about as large as Arizona or Italy), and harbors a population of about 38,000,000 persons, about 83 per cent of whom are Hindus.

In all 16 different localities studied, the incidence of infection was high, ranging from 60 to 100 per cent. The intensity of infection was uniformly low, however, only three stools in over 1,000 examined showing counts over 2,000 eggs per gram. In view of the fact "that the habits of the people are such as to lead to easy acquisition of infection almost everywhere, it is only the long dry season (only 4½ to 5 months are favorable for hookworm propagation), when reinfection is stopped, that can be thanked for the low degree of infection." It is suggested that the people be encouraged to make a practice of standing on the stones or rocks and passing the stools over the edges instead of standing

on the ground beside the rocks. It is believed that most of the infection is acquired while standing, during defecation, on previously polluted spots.

Ascaris in the groups studied varied from 0 to 93 per cent incidence, and *Trichuris* from 0 to 94 per cent. Other helminthic infections encountered included *Strongyloides*, *Gnathostoma*, *Trichostronglyus*, *Hymenolepis nana* and *H. diminuta*, and *Fasciolopsis buski*.

The Prevalence and Epidemiology of Hookworm and Other Helminthic Infections in India. Part VIII: United Provinces of Agra and Oudh.—Asa C. Chandler. Indian Journal of Medical Research. volume 14, No. 3, January, 1927, pp. 761–773. (Abstract by N. R. Stoll.)

The United Provinces of Agra and Oudh lie in the northern part of India between Bihar on the east and the Punjab on the west. The total area is 112,440 square miles, which is a little less than that of the British Isles, and the population in 1921 was 46,510,668.

In the 11 areas studied, hookworm incidence varied from 3 to 94 per cent, but the intensity is low, only 15 stools of 823 examined showing over 2,000 eggs per gram. The highest indices of infection occur in the submontane areas and in the Gangetic plain north of the Ganges, particularly in the East. Here there is a fair rainfall every year, concentrated sufficiently to keep the ground continually moist for several months. The suggestion is made that a hopeful and practical method of reducing infection lies in the encouragement of the habit of wearing shoes when visiting defecation areas.

Ascaris infections varied from 0 to 80 per cent and *Trichuris* from 0 to 7 per cent in the 11 areas studied. *Trichostrongylus*, *Taenia*, *H. diminuta*, and an unidentified fluke were also encountered.

DEATHS DURING WEEK ENDED JUNE 25, 1927

Summary of information received by telegraph from industrial insurance companies for week ended June 25, 1927, and corresponding week of 1926. (From the Weekly Health Index, June 29, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended June 25, 1927	Corresponding week 1926
Policies in force	67, 679, 218	64, 836, 039
Number of death claims	12, 743	12, 056
Death claims per 1,000 policies in force, annual rate	9. 8	9. 7

Deaths from all causes in certain large cities of the United States during the week ended June 25, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, June 29, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended June 25, 1927		Annual death rate per 1,000, corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended June 25, 1927 [2]
	Total deaths	Death rate [1]		Week ended June 25, 1927	Corresponding week 1926	
Total (67 cities)	6,331	11.2	[3] 11.2	672	[3] 712	[4] 55
Akron	36			6	3	65
Albany [5]	30	13.0	10.1	2	1	42
Atlanta	65			12	8	
White	34			4	3	
Colored	31	(6)		8	5	
Baltimore [5]	185	11.8	14.5	23	16	71
White	140		12.7	17	12	66
Colored	45	(6)	25.0	6	4	93
Birmingham	62	15.0	20.8	8	11	
White	25		15.1	5	4	
Colored	37	(6)	29.5	3	7	
Boston	173	11.4	11.7	25	20	70
Bridgeport	22			3	5	56
Buffalo	135	12.8	13.4	18	10	76
Cambridge	21	8.8	14.5	4	2	71
Camden	31	12.2	10.7	2	2	34
Canton	19	8.8	7.6	1	4	24
Chicago [5]	671	11.3	9.0	79	56	68
Cincinnati	111	14.0	13.3	20	8	125
Cleveland	177	9.4	10.9	21	28	56
Columbus	78	14.0	9.9	3	5	28
Dallas	47	11.7	11.3	5	5	
White	39		10.7	5	5	
Colored	8	(6)	15.4	0	0	
Dayton	46	13.3	11.8	7	5	115
Denver	65	11.7	9.9	11	4	
Des Moines	20	7.0	8.9	1	2	17
Detroit	251	9.8	10.9	37	37	58
Duluth	26	11.8	8.3	2	2	43
El Paso	34	15.6	17.7	11	13	
Erie	20			1	3	20
Fall River [5]	25	9.8	11.1	4	5	71
Flint	17	6.2	6.5	7	1	114
Fort Worth	31	9.9	9.8	2	5	
White	28		10.1	1	5	
Colored	3	(6)	8.2	1	0	
Grand Rapids	28	9.2	10.0	2	2	29
Houston	46			5	7	
White	32			5	6	
Colored	14	(6)		0	1	
Indianapolis	101	14.1	9.1	6	5	47
White	83		8.2	5	3	45
Colored	18	(6)	15.4	1	2	61
Jersey City	59	9.6	11.3	10	9	75
Kansas City, Kans.	32	14.3	11.1	2	0	39
White	26		9.7	0	0	0
Colored	6	(6)	17.8	2	0	304
Kansas City, Mo.	93	12.7	11.0	11	7	
Knoxville	24	12.3		2		
White	20			1		
Colored	4	(6)		1		
Los Angeles	262			35	17	100
Louisville	59	9.6	13.1	0	14	0
White	40		11.1	0	7	0
Colored	19	(6)	24.4	0	7	0
Lowell	15	7.1	11.8	0	0	0
Lynn	17	8.4	11.5	2	3	53
Memphis	66	19.2	25.0	5	13	
White	37		20.6	3	5	
Colored	29	(6)	33.1	2	8	

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 66 cities.
[4] Data for 62 cities.
[5] Deaths for week ended Friday, June 24, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population. Atlanta, 31; Baltimore, 15, Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

Deaths from all causes in certain large cities of the United States during the week ended June 25, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926—Continued.

City	Week ended June 25, 1927		Annual death rate per 1,000, corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended June 25, 1927
	Total deaths	Death rate		Week ended June 25, 1927	Corresponding week 1926	
Milwaukee	110	10.8	9.2	7	11	33
Minneapolis	90	10.6	9.4	4	6	23
Nashville [5]	41	15.5	19.8	6	6	
White	24		17.0	3	2	
Colored	17	(6)	26.7	3	4	
New Bedford	18	7.9	10.5	2	3	35
New Haven	38	10.7	9.7	3	4	42
New Orleans	128	15.7	16.9	16	16	
White	74		13.6	9	9	
Colored	54	(6)	26.3	7	7	
New York	1,253	10.9	10.8	152	145	63
Bronx borough	149	8.4	10.9	10	15	32
Brooklyn borough	440	10.1	8.8	62	46	64
Manhattan borough	514	14.8	14.1	66	68	77
Queens borough	116	7.5	7.8	12	14	51
Richmond borough	34	12.1	13.9	2	2	37
Newark, N. J.	89	11.0	8.4	13	15	64
Oakland	46	9.0	9.0	6	9	70
Oklahoma City	45			3	2	
Omaha	42	10.0	10.1	3	2	33
Paterson	27	9.8	12.0	2	2	85
Philadelphia	404	10.3	11.8	19	42	25
Pittsburgh	152	12.3	11.1	10	18	35
Portland, Oreg.	69			0	5	0
Providence	56	10.4	12.7	7	7	59
Richmond	48	13.0	16.3	3	9	40
White	24		15.2	1	4	20
Colored	24	(6)	19.0	2	5	76
Rochester	67	10.8	12.0	3	10	25
St. Louis	180	11.2	10.9	16	15	
St. Paul	57	11.9	11.4	1	5	9
Salt Lake City [5]	24	9.2	9.8	2	2	30
San Antonio	51	12.6	13.0	12	15	
San Diego	32	14.5	10.9	3	2	64
San Francisco	129	11.7	11.6	11	8	69
Schenectady	27	15.1	10.1	2	3	80
Seattle	72			1	4	10
Somerville	21	10.7	7.3	0	1	0
Spokane	31	14.8	14.8	0	0	0
Springfield, Mass	30	10.6	11.1	1	5	15
Syracuse	46	12.2	12.7	2	5	26
Tacoma	20	9.7	8.9	1	2	24
Toledo	66	11.3	12.0	6	9	58
Trenton	47	17.9	11.3	5	4	87
Washington, D. C	101	9.8	13.2	10	11	58
White	53		11.1	5	5	42
Colored	48	(6)	19.5	5	6	92
Waterbury	18			3	5	71
Wilmington, Del	29	12.0	9.3	3	2	74
Worcester	46	12.3	14.0	3	12	36
Yonkers	15	6.6	9.9	3	1	68
Youngstown	21	6.5	7.0	2	4	28

[5] Deaths for week ended Friday, June 24, 1927.

[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31, Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended July 2, 1927

DIPHTHERIA

	Cases
Alabama	15
Arizona	3
Arkansas	3
California	71
Colorado	23
Connecticut	31
Delaware	1
Florida	12
Georgia	8
Illinois	105
Indiana	13
Iowa [1]	6
Kansas	9
Louisiana	16
Maine	5
Maryland [1]	59
Massachusetts	68
Michigan	66
Minnesota	22
Mississippi	3
Missouri [2]	2
Montana	1
Nebraska	4
New Jersey	82
New Mexico	1
New York [3]	84
North Carolina	17
Oklahoma [4]	4
Oregon	6
Pennsylvania	133
Rhode Island	6
South Carolina	8
South Dakota	2
Tennessee	9
Texas	9
Utah [1]	3
Vermont	1
Washington	8
West Virginia	6
Wisconsin	22

INFLUENZA

	Cases
Alabama	5
Arkansas	10
California	10
Connecticut	2
Florida	2
Georgia	21
Illinois	66
Kansas	1
Louisiana	41
Maine	1
Maryland [1]	1
Massachusetts	1
Michigan	3
Minnesota	2
New Jersey	5
Oklahoma [4]	6
Oregon	10
South Carolina	96
Tennessee	12
Texas	1
West Virginia	14
Wisconsin	3

MEASLES

	Cases
Alabama	62
Arkansas	49
California	207
Colorado	73
Connecticut	47
Delaware	1
Florida	16
Georgia	33
Idaho	4
Illinois	271
Indiana	34
Iowa [1]	52
Kansas	174
Louisiana	103
Maine	101
Maryland [1]	20

[1] Week ended Friday.

[2] Exclusive of Kansas City and St. Louis.

[3] Exclusive of New York City.

[4] Exclusive of Oklahoma City and Tulsa.

MEASLES—continued	Cases
Massachusetts	364
Michigan	168
Minnesota	70
Missouri [2]	23
Montana	27
Nebraska	26
New Jersey	31
New Mexico	61
New York [3]	443
North Carolina	698
Oklahoma [4]	79
Oregon	60
Pennsylvania	293
South Carolina	205
South Dakota	25
Tennessee	12
Texas	25
Utah [1]	3
Vermont	52
Washington	317
West Virginia	78
Wisconsin	415
Wyoming	13

MENINGOCOCCUS MENINGITIS	
Alabama	1
Arizona	1
Arkansas	1
California	4
Connecticut	1
Georgia	1
Idaho	1
Illinois	5
Indiana	1
Kansas	2
Maryland [1]	2
Massachusetts	1
Michigan	6
Minnesota	2
Montana	2
New Jersey	1
North Carolina	1
Oregon	1
Pennsylvania	1
Washington	1
Wisconsin	11

POLIOMYELITIS	
Arkansas	4
California	14
Georgia	1
Illinois	4
Kansas	2
Louisiana	6
Massachusetts	2
Michigan	1
New Mexico	2
Oklahoma [4]	2
Pennsylvania	1
South Carolina	4
Tennessee	3

SCARLET FEVER	Cases
Alabama	8
Arizona	2
Arkansas	1
California	73
Colorado	59
Connecticut	23
Delaware	2
Florida	3
Georgia	15
Idaho	1
Illinois	132
Indiana	39
Iowa [1]	13
Kansas	35
Louisiana	2
Maine	34
Maryland [1]	23
Massachusetts	271
Michigan	150
Minnesota	95
Mississippi	1
Missouri [2]	8
Montana	9
Nebraska	24
New Jersey	150
New Mexico	10
New York [3]	121
North Carolina	14
Oklahoma [4]	14
Oregon	8
Pennsylvania	281
Rhode Island	24
South Carolina	5
South Dakota	17
Tennessee	7
Texas	8
Utah [1]	6
Vermont	8
Washington	31
West Virginia	21
Wisconsin	66
Wyoming	6

SMALLPOX	
Alabama	13
Arkansas	8
California	16
Colorado	1
Florida	14
Georgia	9
Idaho	1
Illinois	13
Indiana	43
Iowa [1]	17
Kansas	22
Louisiana	3
Maryland [1]	1
Michigan	22
Minnesota	1
Mississippi	1
Missouri [2]	19

[1] Week ended Friday.
[2] Exclusive of Kansas City and St. Louis.
[3] Exclusive of New York City.
[4] Exclusive of Oklahoma City and Tulsa.

SMALLPOX—continued	Cases
Montana	6
Nebraska	21
New York [3]	4
North Carolina	10
Oklahoma [4]	24
Oregon	14
South Carolina	3
Tennessee	8
Texas	10
Utah [1]	12
Washington	27
West Virginia	52
Wisconsin	18
Wyoming	2

TYPHOID FEVER	Cases
Alabama	63
Arizona	13
Arkansas	39
California	9
Colorado	4
Connecticut	2
Delaware	2
Florida	8
Georgia	64
Idaho	1

TYPHOID FEVER—continued	Cases
Illinois	26
Indiana	6
Kansas	8
Louisiana	37
Maine	1
Maryland [1]	8
Massachusetts	3
Michigan	3
Minnesota	1
Mississippi	37
Missouri [2]	1
Montana	2
Nebraska	2
New Jersey	6
New Mexico	5
New York [3]	7
North Carolina	51
Oklahoma [4]	44
Oregon	3
Pennsylvania	22
South Carolina	98
Tennessee	106
Texas	19
Washington	7
West Virginia	11
Wisconsin	6

Reports for Week Ended June 25, 1927

DIPHTHERIA	Cases
District of Columbia	6
North Dakota	2
MEASLES	
District of Columbia	8
North Dakota	30
SCARLET FEVER	
District of Columbia	14
North Dakota	19

SMALLPOX	Cases
District of Columbia	10
North Dakota	5
TYPHOID FEVER	
District of Columbia	1
North Dakota	1

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week

State	Cerebrospinal meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
January, 1927										
Colorado		61	2		1,156		1	729	68	5
February, 1927										
Colorado		67	3		4,311		3	792	48	2
Delaware		5	7		17		0	158	1	1
March, 1927										
Ohio	18	621	107		933	1	2	2,398	232	35
April, 1927										
Ohio	9	478	215	1	878		1	1,752	170	45

[1] Week ended Friday.
[2] Exclusive of Kansas City and St. Louis.
[3] Exclusive of New York City.
[4] Exclusive of Oklahoma City and Tulsa.

SUMMARY OF MONTHLY REPORTS FROM STATES—Continued

State	Cerebrospinal meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
May, 1927										
Alabama		70	155	129	953	83	0	30	101	101
Colorado		69			1,332		0	689	38	40
Idaho	4	9	1		248		0	56	52	11
Indiana	1	81	63		687		0	472	443	8
Kansas	4	29	38		3,828	1	1	267	85	12
Louisiana	1	78	55	88	255	40	7	21	20	76
Mississippi		27	1,357	5,646	1,760	1,286	4	29	31	140
Missouri	12	166	16	3	954		2	339	69	57
North Carolina	1	52		3	7,220		0	68	179	57
Oklahoma [1]	2	17	165	97	1,287	46	1	101	165	89
Oregon	6	42	70	1	1,298		0	117	72	25
South Dakota		13	6		342		0	121	16	2
Virginia	2	83	1,301	86	3,698	39	4	121	172	50
Washington	22	46	29		1,844		1	175	195	14

[1] Exclusive of Oklahoma City and Tulsa.

January, 1927

	Cases
Colorado:	
Chicken pox	235
German measles	3
Impetigo contagiosa	8
Mumps	20
Paratyphoid fever	3
Scabies	3
Septic sore throat	3
Whooping cough	11

February, 1927

	Cases
Chicken pox:	
Colorado	219
Delaware	10
German measles:	
Colorado	31
Impetigo contagiosa:	
Colorado	17
Lethargic encephalitis:	
Colorado	2
Mumps:	
Colorado	40
Delaware	2
Septic sore throat:	
Colorado	2
Trachoma:	
Colorado	1
Whooping cough:	
Colorado	12
Delaware	19

March, 1927

	Cases
Ohio:	
Chicken pox	1,921
Dysentery	1
German measles	507
Lead poisoning	22
Lethargic encephalitis	3
Mumps	740
Ophthalmia neonatorum	108
Paratyphoid fever	1
Trachoma	3
Whooping cough	871

April, 1927

	Cases
Ohio:	
Chicken pox	9,844
German measles	658
Lead poisoning	12
Leprosy	1
Lethargic encephalitis	3
Mumps	846
Ophthalmia neonatorum	106
Paratyphoid fever	1
Trachoma	5
Whooping cough	679

May, 1927

	Cases
Anthrax:	
Louisiana	1
Chicken pox:	
Alabama	82
Colorado	176
Idaho	34
Indiana	247
Kansas	330
Louisiana	19
Mississippi	553
Missouri	231
North Carolina	431
Oklahoma	47
Oregon	107
South Dakota	11
Virginia	507
Washington	310
Dengue:	
Alabama	1
Mississippi	3
Dysentery:	
Louisiana	2
Mississippi (amebic)	114
Mississippi (bacillary)	2,451
Oklahoma	17
Oregon	2
Virginia	328

May, 1927—Continued

	Cases
German measles:	
Colorado	63
Kansas	46
North Carolina	41
Washington	1,415
Hookworm disease:	
Louisiana	8
Mississippi	408
Virginia	7
Impetigo contagiosa:	
Oregon	6
Leprosy:	
Louisiana	1
Missouri	1
South Dakota	1
Lethargic encephalitis:	
Alabama	2
Kansas	1
Louisiana	3
Oregon	1
Washington	6
Mumps:	
Alabama	76
Colorado	54
Idaho	25
Indiana	10
Kansas	155
Louisiana	66
Mississippi	600
Missouri	442
Oklahoma	66
Oregon	80
South Dakota	11
Washington	356
Ophthalmia neonatorum:	
Idaho	1
Mississippi	18
Paratyphoid fever:	
Colorado	1
Louisiana	1
Puerperal septicemia:	
Mississippi	51
Rabies in animals:	
Idaho	3
Mississippi	6
Missouri	3
Oregon	1
Washington	2

May, 1927—Continued

	Cases
Rocky Mountain spotted or tick fever:	
Colorado	5
Idaho	5
Oregon	8
Washington	1
Scabies:	
Oregon	3
Septic sore throat:	
Colorado	2
Kansas	1
Missouri	9
North Carolina	13
Oklahoma	4
Oregon	7
Washington	1
Tetanus:	
Kansas	1
Louisiana	3
Missouri	4
Trachoma:	
Louisiana	1
Mississippi	6
Missouri	9
North Carolina	1
Typhus fever:	
Alabama	1
Vincent's angina:	
Kansas	5
Oklahoma	6
Whooping cough:	
Alabama	221
Colorado	79
Idaho	57
Indiana	195
Kansas	303
Louisiana	121
Mississippi	2,054
Missouri	284
North Carolina	2,490
Oklahoma	88
Oregon	72
South Dakota	35
Virginia	1,061
Washington	169

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 101 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,966,000. The estimated population of the 95 cities reporting deaths is more than 30,295,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended June 18, 1927, and June 19, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
40 States	1,453	1,055	
101 cities	895	662	749
Measles:			
39 States	7,403	13,853	
101 cities	2,143	4,373	
Poliomyelitis:			
39 States	32	21	
Scarlet fever:			
41 States	2,674	2,898	
101 cities	1,177	1,360	712
Smallpox:			
40 States	483	378	
101 cities	112	67	89
Typhoid fever:			
40 States	513	377	
101 cities	77	66	76
Deaths reported			
Influenza and pneumonia:			
95 cities	538	537	
Smallpox:			
95 cities	0	0	

City reports for week ended June 18, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics, or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included In obtaining the estimated expectancy the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine									
Portland	75,333	0	1	0	0	0	0	0	2
New Hampshire:									
Concord	22,546	0	0	0	0	0	1	0	0
Manchester	83,097	0	1	0	0	1	0	0	0
Vermont									
Barre	10,008	0	0	0	0	0	0	0	2
Burlington	24,089	0	0	0	0	0	10	0	0
Massachusetts:									
Boston	779,620	47	46	31	1	0	131	53	19
Fall River	128,993	9	3	2	0	0	13	1	1
Springfield	142,065	11	2	4	0	0	0	7	1
Worcester	190,757	45	3	0	0	0	7	5	4
Rhode Island:									
Pawtucket	69,760	8	1	1	0	0	0	0	1
Providence	267,918	0	6	3	0	1	0	0	2
Connecticut:									
Bridgeport	(1)	1	4	4	0	0	1	2	3
Hartford	160,197	4	4	6	0	0	6	10	7
New Haven	178,927	15	1	0	0	0	16	9	4

[1] No estimate made.

City reports for week ended June 18, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	29	8	11	......	0	21	14	10
New York	5,873,356	228	200	319	9	8	107	156	107
Rochester	316,786	10	8	9	......	0	12	4	6
Syracuse	182,003	31	4	1	......	0	227	3	6
New Jersey:									
Camden	128,642	1	4	17	0	0	1	2	0
Newark	452,513	151	11	11	0	0	4	78	7
Trenton	132,020	2	2	3	0	0	0	1	0
Pennsylvania									
Philadelphia	1,979,364	82	58	47	......	3	60	113	40
Pittsburgh	631,563	47	14	20	......	0	82	14	17
Reading	112,707	0	2	1	......	0	56	17	0
EAST NORTH CENTRAL									
Ohio.									
Cincinnati	409,333	12	7	7	0	2	6	6	5
Cleveland	936,485	107	19	60	1	0	7	70	7
Columbus	279,836	7	2	5	0	0	1	0	4
Toledo	287,380	58	4	5	1	1	14	3	1
Indiana:									
Fort Wayne	97,846	5	2	2	0	0	2	0	5
Indianapolis	358,819	10	3	2	0	0	6	32	4
South Bend	80,091	0	1	0	0	0	1	1	0
Terre Haute	71,071	0	1	0	0	0	8	0	0
Illinois:									
Chicago	2,995,239	74	70	69	5	2	98	145	62
Springfield	63,923	11	0	1	1	1	1	3	0
Michigan.									
Detroit	1,245,824	54	42	48	1	1	14	89	31
Flint	130,316	12	2	1	0	2	19	0	1
Grand Rapids	153,698	7	2	1	0	0	24	2	0
Wisconsin.									
Kenosha	50,891	10	1	0	0	0	2	8	0
Madison	46,385	11	0	2	0	0	1	0	1
Milwaukee	509,192	102	11	15	0	0	109	73	8
Racine	67,707	16	0	1	0	0	1	5	1
Superior	39,671	0	0	0	0	0	2	0	1
WEST NORTH CENTRAL									
Minnesota									
Duluth	110,502	11	1	1	0	0	4	0	0
Minneapolis	425,435	106	12	7	0	0	10	0	7
St. Paul	246,001	32	12	3	0	1	8	0	6
Iowa:									
Davenport	52,469	0	1	1	0	......	0	1	......
Des Moines	41,441	0	0	6	0	......	0	0	1
Sioux City	76,411	2	1	0	0	......	12	5	......
Waterloo	36,771	0	1	0	0	......	0	1	......
Missouri:									
Kansas City	367,481	2	4	8	0	0	25	2	3
St. Joseph	78,342	0	1	0	0	0	9	0	1
St. Louis	821,543	9	32	16	1	0	15	28	......
North Dakota:									
Fargo	26,403	4	1	0	0	0	1	0	0
Grand Forks	14,811	0	0	0	0	......	0	0	......
South Dakota:									
Aberdeen	15,036	1	1	0	0	......	0	0	......
Sioux Falls	30,127	0	0	0	0	......	74	0	......
Nebraska:									
Lincoln	60,941	2	0	4	0	0	11	3	1
Omaha	211,768	0	2	1	0	0	2	7	4
Kansas:									
Topeka	55,411	8	0	0	0	0	26	1	0
Wichita	88,367	5	1	4	0	0	13	0	2

City reports for week ended June 18, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
SOUTH ATLANTIC									
Delaware									
Wilmington	122,049	3	2	0	0	0	0	0	2
Maryland.									
Baltimore	796,296	40	15	39	5	1	2	5	12
Cumberland	33,741	1	0	0	0	0	2	2	0
Frederick	12,035	0	0	1	0	0	0	0	1
District of Columbia									
Washington	497,906	15	8	17	1	0	2	0	6
Virginia:									
Lynchburg	30,395	12	1	0	0	0	12	3	0
Norfolk	(1)	2	0	2	0	0	3	0	2
Richmond	186,403	3	1	2	0	1	62	2	2
Roanoke	58,208	11	0	0	0	0	1	0	1
West Virginia:									
Charleston	49,019	0	0	1	2	1	6	0	0
Wheeling	56,208	5	0	0	0	0	3	0	1
North Carolina									
Raleigh	30,371	4	0	0	0	0	52	0	0
Wilmington	37,061	1	1	0	0	0	53	1	1
Winston-Salem	69,031	0	0	0	0	1	123	17	1
South Carolina									
Charleston	73,125	0	0	0	1	0	1	0	1
Columbia	41,225	4	0	0	0	------	28	1	1
Greenville	27,311	0	0	0	0	0	1	1	0
Georgia									
Atlanta	(1)	2	1	1	8	1	9	5	3
Brunswick	16,809	0	0	0	0	0	0	5	0
Savannah	93,134	1	1	0	1	0	10	0	0.
Florida									
Miami	69,754	0	2	1	0	0	0	0	1
St Petersburg	26,847	------	0	------	------	0	------	------	0
Tampa	94,743	0	1	2	0	0	13	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	1	1	0	0	0	0	0
Louisville	305,935	5	2	0	0	0	0	2	8
Tennessee:									
Memphis	174,533	2	1	0	0	0	6	0	5
Nashville	136,220	1	0	0	0	1	0	0	0
Alabama									
Birmingham	205,670	3	0	7	2	0	16	2	1
Mobile	65,955	0	0	0	1	0	0	0	0
Montgomery	46,481	0	0	0	0	0	4	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	0	1	0	0	------	2	0	------
Little Rock	74,216	0	0	0	0	0	15	0	3
Louisiana									
New Orleans	414,493	0	5	4	3	3	5	0	11
Shreveport	57,857	0	0	2	0	0	5	0	2
Oklahoma									
Tulsa	124,478	0	------	0	0	------	0	0	------
Texas:									
Dallas	194,450	------	2	5	0	0	26	------	4
Galveston	48,375	0	0	0	0	0	0	0	0
Houston	164,954	0	2	0	0	0	4	0	2
San Antonio	198,069	0	1	2	0	1	7	0	0
MOUNTAIN									
Montana:									
Billings	17,971	6	0	0	0	0	0	0	0
Great Falls	29,883	3	1	0	0	0	10	0	1
Helena	12,037	2	0	0	0	0	0	0	1
Missoula	12,668	0	0	0	0	0	2	0	2
Idaho:									
Boise	23,042	1	0	0	0	0	0	0	0

1 No estimate made.

City reports for week ended June 18, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria: Cases, estimated expectancy	Diphtheria: Cases reported	Influenza: Cases reported	Influenza: Deaths reported	Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
MOUNTAIN—continued									
Colorado:									
Denver	280,911	12	9	16	......	1	24	3	7
Pueblo	43,787	3	1	1	0	0	0	0	1
New Mexico:									
Albuquerque	21,000	0	1	0	0	0	6	3	1
Utah:									
Salt Lake City	130,948	49	3	6	0	0	2	1	5
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	(1)	19	5	2	0	......	210	17	......
Spokane	108,897	14	2	5	0	......	1	0	......
Tacoma	104,455	3	2	1	0	0	34	0	2
Oregon:									
Portland	282,383	6	5	2	0	0	65	1	2
California:									
Los Angeles	(1)	23	37	27	2	0	75	12	18
Sacramento	72,260	18	3	0	0	0	10	4	3
San Francisco	557,530	57	18	9	1	0	41	72	6

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
NEW ENGLAND											
Maine:											
Portland	1	0	0	0	0	0	1	4	0	3	12
New Hampshire:											
Concord	0	1	0	0	0	0	0	0	0	0	6
Manchester	0	0	0	0	0	0	0	0	0	0	15
Vermont:											
Barre	0	0	0	0	0	0	0	0	0	0	7
Burlington	0	0	0	0	0	0	0	0	0	2	......
Massachusetts:											
Boston	41	69	0	0	0	17	2	0	0	0	215
Fall River	2	3	0	0	0	0	1	0	0	0	26
Springfield	3	1	0	0	0	3	0	0	0	6	25
Worcester	5	11	0	0	0	5	0	0	0	5	52
Rhode Island:											
Pawtucket	1	2	0	0	0	2	0	0	0	0	12
Providence	4	13	0	0	0	3	1	0	0	1	48
Connecticut:											
Bridgeport	6	3	0	0	0	2	0	0	0	1	21
Hartford	2	10	0	0	0	0	0	1	0	5	49
New Haven	3	1	0	0	0	1	0	0	0	5	34
MIDDLE ATLANTIC											
New York:											
Buffalo	15	14	0	0	0	2	0	1	0	14	128
New York	134	293	0	0	0	[2] 94	13	7	0	121	1,301
Rochester	10	6	0	0	0	6	1	1	0	11	65
Syracuse	5	6	0	0	0	2	0	0	0	17	51
New Jersey:											
Camden	3	10	0	0	0	2	0	0	0	0	31
Newark	15	24	0	0	0	7	0	1	0	38	87
Trenton	2	1	0	1	0	2	0	0	0	0	38
Pennsylvania:											
Philadelphia	59	86	0	0	0	24	4	2	0	23	444
Pittsburgh	23	13	0	0	0	10	1	0	0	13	164
Reading	1	1	0	0	0	0	0	0	0	2	23

[1] No estimate made.

[2] Pulmonary tuberculosis only.

City reports for week ended June 18, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	8	20	2	5	0	8	1	2	0	5	111
Cleveland	22	29	1	0	0	18	1	1	0	23	189
Columbus	5	6	2	0	0	2	1	0	0	12	67
Toledo	9	18	1	1	0	2	0	0	0	35	65
Indiana:											
Fort Wayne	1	3	1	0	0	1	1	0	0	2	34
Indianapolis	6	11	8	20	0	7	1	0	0	18	86
South Bend	2	1	1	1	0	1	0	0	0	1	7
Terre Haute	2	0	0	0	0	0	0	0	0	0	15
Illinois:											
Chicago	70	96	2	1	0	47	3	2	0	92	671
Springfield	1	0	0	0	0	1	0	0	0	0	14
Michigan:											
Detroit	49	74	3	0	0	26	3	5	0	76	275
Flint	3	22	0	1	0	0	0	0	0	2	27
Grand Rapids	4	14	1	0	0	0	0	1	1	3	31
Wisconsin:											
Kenosha	0	6	1	0	0	0	0	1	0	4	6
Madison	1	2	0	0	0	0	0	0	0	6	4
Milwaukee	15	38	1	3	0	4	0	0	0	24	88
Racine	3	0	1	0	0	1	0	0	0	7	13
Superior	2	3	2	0	0	1	0	0	0	1	7
WEST NORTH CENTRAL											
Minnesota:											
Duluth	4	6	4	0	0	1	0	0	0	0	19
Minneapolis	21	28	7	0	0	7	0	2	0	1	96
St. Paul	16	17	3	0	0	3	0	0	0	7	45
Iowa:											
Davenport	0	2	3	0			0	0		0	
Des Moines	4	5	3	2		2	0	0		0	47
Sioux City	1	0	2	0			0	0		1	
Waterloo	1	0	0	0			0	0		0	
Missouri:											
Kansas City	4	5	1	0	0	6	0	0	1	18	79
St. Joseph	0	1	0	10	0	1	0	0	0	0	15
St. Louis	18	15	2	3	0	9	2	1	0	41	196
North Dakota:											
Fargo	0	3	0	0	0	0	0	0	0	3	8
Grand Forks	0	1	1	0			0	0		0	
South Dakota:											
Aberdeen	2	0	0	0			0	0		1	
Sioux Falls	0	1	0	0			0	0		0	
Nebraska:											
Lincoln	0	1	0	2	0	1	0	0	0	1	14
Omaha	3	6	5	1	0	2	0	0	0	1	55
Kansas:											
Topeka	1	0	1	0	0	1	0	0	0	12	12
Wichita	1	1	3	1	0	1	0	0	0	12	24
SOUTH ATLANTIC											
Delaware:											
Wilmington	3	0	0	0	0	0	0	0	0	0	18
Maryland:											
Baltimore	20	18	0	0	0	15	3	2	0	61	192
Cumberland	0	0	0	0	0	1	0	0	0	0	9
Frederick	0	0	0	0	0	0	0	0	0	0	2
District of Columbia:											
Washington	13	12	1	12	0	16	2	2	1	12	126
Virginia:											
Lynchburg	0	1	0	0	0	1	0	0	0	3	15
Norfolk	1	7	0	0	0	4	0	0	0	7	
Richmond	1	0	0	0	0	2	1	1	0	0	39
Roanoke	1	0	0	2	0	0	1	0	0	2	12
West Virginia:											
Charleston	1	0	0	0	0	1	1	0	0	0	14
Wheeling	2	0	0	0	0	1	0	0	0	0	13
North Carolina:											
Raleigh	0	0	0	0	0	1	0	0	0	6	8
Wilmington	0	0	0	0	0	0	0	1	0	9	6
Winston-Salem	0	0	1	0	0	1	1	1	0	31	19

City reports for week ended June 18, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
SOUTH ATLANTIC—continued											
South Carolina:											
Charleston	0	1	0	2	0	1	2	1	2	0	28
Columbia	0	0	0	0	......	......	2	0	......	4	7
Greenville	0	0	0	0	0	1	1	0	0	1	5
Georgia:											
Atlanta	3	5	3	3	0	7	2	5	3	2	63
Brunswick	0	0	0	0	0	0	0	0	0	0	4
Savannah	1	1	1	0	0	2	1	2	0	6	37
Florida:											
Miami	0	1	......	1	0	0	1	2	0	11	16
St. Petersburg	0	......	0	......	0	0	0	......	0	......	11
Tampa	0	0	0	1	0	1	0	0	0	0	13
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0	1	0	1	0	0	0	0	0	0	16
Louisville	4	4	1	4	0	2	1	1	0	14	59
Tennessee:											
Memphis	2	5	1	1	0	6	1	6	0	0	65
Nashville	1	0	1	0	0	4	2	3	0	1	44
Alabama:											
Birmingham	1	3	4	5	0	3	3	5	0	16	62
Mobile	0	1	1	0	0	1	0	0	0	0	24
Montgomery	0	0	0	0	0	0	0	1	0	0	......
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	0	0	0	0	......	......	0	0	......	1	......
Little Rock	1	0	0	0	0	4	1	0	0	3	......
Louisiana:											
New Orleans	2	0	0	0	0	13	3	6	0	8	151
Shreveport	0	0	1	0	0	2	1	0	0	0	28
Oklahoma:											
Tulsa	......	2	......	1	......	......	......	1	......	4	......
Texas:											
Dallas	1	1	1	0	0	1	1	1	0	......	39
Galveston	0	0	0	0	0	0	0	0	0	0	13
Houston	0	1	1	3	0	5	1	2	1	0	40
San Antonio	0	0	0	0	0	5	1	0	0	0	46
MOUNTAIN											
Montana:											
Billings	0	1	0	0	0	0	0	0	0	21	4
Great Falls	1	3	0	0	0	1	1	0	0	0	9
Helena	0	0	0	2	0	0	0	0	0	0	5
Missoula	0	3	0	0	0	0	0	0	0	0	6
Idaho:											
Boise	1	0	0	1	0	0	0	0	0	1	6
Colorado:											
Denver	8	39	0	0	0	13	0	1	0	1	86
Pueblo	1	21	0	0	0	0	0	0	0	0	10
New Mexico:											
Albuquerque	0	0	0	0	0	6	0	0	0	0	18
Utah:											
Salt Lake City	2	7	0	3	0	0	1	1	0	25	28
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	3
PACIFIC											
Washington:											
Seattle	9	8	4	1	......	......	0	1	......	19	......
Spokane	4	7	3	15	......	......	0	1	......	0	......
Tacoma	2	6	3	8	0	2	0	0	0	7	23
Oregon:											
Portland	6	3	7	5	0	5	0	5	0	2	50
California:											
Los Angeles	17	28	5	0	0	32	3	0	0	16	267
Sacramento	1	1	1	0	0	3	1	0	0	0	16
San Francisco	10	19	2	1	0	8	1	1	0	83	148

City reports for week ended June 18, 1927—**Continued**

Division, State, and city	Cerebrospinal meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Boston	0	1	0	1	0	0	0	1	0
Fall River	0	0	0	0	0	0	0	1	0
Connecticut:									
Hartford	1	1	0	0	0	0	0	0	0
MIDDLE ATLANTIC									
New York:									
New York [1]	3	2	1	3	0	0	1	0	0
New Jersey:									
Newark	0	0	2	1	0	0	0	1	0
Pennsylvania:									
Philadelphia	0	0	0	0	2	2	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Cleveland	2	1	1	0	0	0	0	0	0
Illinois:									
Chicago	7	4	0	0	0	0	1	0	0
Michigan:									
Detroit	2	0	2	0	0	0	0	0	0
Flint	0	1	0	0	0	0	0	0	0
Wisconsin:									
Milwaukee	4	1	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	1	0	0	0	0	0	0	0	0
Minneapolis	1	0	0	0	0	0	0	0	0
Kansas:									
Wichita	0	0	0	0	1	0	0	0	0
SOUTH ATLANTIC									
Georgia:									
Savannah [1]	0	0	0	0	0	1	0	0	0
Florida:									
Miami	0	0	0	0	1	0	0	0	0
EAST SOUTH CENTRAL									
Tennessee:									
Memphis	1	1	0	0	0	0	0	0	0
Nashville	0	0	0	0	1	1	0	0	
Alabama:									
Birmingham	0	1	0	0	2	4	1	1	1
Mobile	0	0	0	0	0	2	0	0	0
WEST SOUTH CENTRAL									
Louisiana:									
New Orleans	1	1	0	0	1	1	0	1	0
Shreveport	0	0	0	0	0	3	0	0	0
Texas:									
Galveston	1	1	0	0	0	0	0	0	0
San Antonio	0	0	0	0	0	2	0	0	0
MOUNTAIN									
Montana:									
Missoula	1	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	1		0		0		0	0	
Oregon:									
Portland	1	0	0	1	0	0	0	0	0
California:									
Los Angeles	0	0	0	0	0	0	1	4	0
San Francisco	1	0	0	0	0	0	1	0	0

[1] Typhus fever: 1 case at New York, N. Y., and 5 cases and 1 death at Savannah, Ga.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended June 18, 1927, compared with those for a like period ended June 19, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, May 15 to June 18, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	May 22, 1926	May 21, 1927	May 29, 1926	May 28, 1927	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927
101 cities	118	174	122	171	117	158	136	[2] 162	113	151
New England	78	153	80	160	78	160	68	132	78	118
Middle Atlantic	138	268	145	234	135	235	156	248	125	217
East North Central	118	160	108	145	119	124	146	126	131	142
West North Central	147	105	165	91	210	81	234	81	169	79
South Atlantic	71	111	95	145	47	127	60	[2] 124	67	118
East South Central	36	36	41	97	16	61	26	20	16	41
West South Central	47	50	64	84	56	67	47	46	43	55
Mountain	128	108	128	144	109	180	128	369	146	207
Pacific	163	105	158	196	131	128	158	126	102	115
MEASLES CASE RATES										
101 cities	1,393	622	1,266	550	1,005	448	930	[2] 426	749	361
New England	1,073	416	1,061	434	726	313	658	457	493	406
Middle Atlantic	1,135	324	957	366	752	282	708	299	586	281
East North Central	1,215	493	1,189	373	1,067	324	1,026	296	1,003	261
West North Central	3,465	955	3,086	655	2,231	461	2,051	373	1,264	248
South Atlantic	1,645	1,544	1,529	1,364	1,203	1,005	1,093	[2] 851	818	694
East South Central	2,989	357	2,368	321	1,655	382	1,391	158	693	132
West South Central	142	629	112	466	86	503	125	424	77	268
Mountain	1,385	908	1,303	1,052	1,249	620	921	566	702	342
Pacific	688	1,217	798	1,063	691	1,097	589	1,139	597	971
SCARLET FEVER CASE RATES										
101 cities	308	310	274	295	230	220	260	[2] 241	233	198
New England	288	432	257	365	248	288	255	323	203	265
Middle Atlantic	256	416	212	364	209	256	195	287	222	224
East North Central	341	268	337	302	245	212	333	247	273	216
West North Central	720	288	700	246	419	236	627	195	484	163
South Atlantic	104	101	158	121	188	78	158	[2] 110	130	82
East South Central	176	132	171	138	124	102	78	66	47	71
West South Central	172	34	116	25	163	21	86	34	69	8
Mountain	173	989	100	899	219	782	118	719	128	665
Pacific	292	168	179	209	169	186	236	204	214	181
SMALLPOX CASE RATES										
101 cities	18	26	19	29	15	22	16	[2] 20	11	19
New England	0	0	0	0	0	0	0	0	0	0
Middle Atlantic	0	0	1	0	0	0	0	0	0	0
East North Central	18	37	13	49	9	33	12	21	10	21
West North Central	28	48	44	42	40	24	28	32	32	80
South Atlantic	24	36	28	40	34	33	37	[2] 20	30	86
East South Central	62	76	62	61	83	92	52	107	10	56
West South Central	95	17	99	29	43	17	34	8	26	13
Mountain	18	45	36	27	27	36	46	27	27	54
Pacific	51	71	32	84	24	60	54	92	24	65

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.

[2] Greenville, S. C., not included.

Summary of weekly reports from cities, May 15 to June 18, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	May 22, 1926	May 21, 1927	May 29, 1926	May 28, 1927	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927
101 cities	11	10	10	9	9	13	12	[2] 11	11	13
New England	9	5	7	9	0	9	17	5	19	12
Middle Atlantic	7	6	5	6	9	5	6	6	9	6
East North Central	5	5	9	7	5	7	4	7	3	8
West North Central	8	6	4	4	8	12	6	14	10	6
South Atlantic	32	13	26	18	32	29	26	[2] 18	28	27
East South Central	10	56	31	31	10	61	57	41	21	82
West South Central	26	46	13	25	9	38	52	34	30	38
Mountain	9	9	0	18	9	9	9	0	0	18
Pacific	19	10	11	8	8	26	13	21	8	8

INFLUENZA DEATH RATES

	May 22, 1926	May 21, 1927	May 29, 1926	May 28, 1927	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927
95 cities	15	12	12	9	8	7	10	[2] 6	7	6
New England	12	14	9	9	2	2	12	0	9	2
Middle Atlantic	16	10	11	8	6	9	9	5	9	5
East North Central	18	12	11	4	8	4	10	4	3	5
West North Central	8	8	13	12	8	6	4	4	4	2
South Atlantic	11	11	11	13	8	17	6	[2] 9	4	9
East South Central	36	41	26	25	36	5	36	10	16	5
West South Central	22	26	9	26	13	17	18	26	22	17
Mountain	0	9	9	9	18	0	9	9	0	9
Pacific	4	0	11	3	4	3	0	7	4	0

PNEUMONIA DEATH RATES

	May 22, 1926	May 21, 1927	May 29, 1926	May 28, 1927	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927
95 cities	141	109	119	100	105	93	95	[2] 94	87	87
New England	144	100	123	144	116	116	101	88	87	107
Middle Atlantic	173	119	145	116	131	108	110	112	95	95
East North Central	133	104	107	85	98	70	87	93	74	86
West North Central	95	58	84	87	51	58	59	50	74	48
South Atlantic	149	145	110	86	79	110	96	[2] 65	112	61
East South Central	171	107	171	61	124	51	124	112	98	71
West South Central	84	103	102	90	93	82	88	103	66	95
Mountain	82	63	91	36	146	72	82	90	100	153
Pacific	53	121	64	100	67	97	67	83	74	100

[2] Greenville, S. C., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30, 443, 800	30, 966, 700	29, 783, 700	30, 295, 900
New England	12	12	2, 211, 000	2, 245, 900	2, 211, 000	2, 245, 900
Middle Atlantic	10	10	10, 457, 000	10, 567, 000	10, 457, 000	10, 567, 000
East North Central	16	16	7, 650, 200	7, 810, 600	7, 650, 200	7, 810, 600
West North Central	12	10	2, 585, 500	2, 626, 600	2, 470, 600	2, 510, 000
South Atlantic	21	20	2, 799, 500	2, 878, 100	2, 757, 700	2, 835, 700
East South Central	7	7	1, 008, 300	1, 023, 500	1, 008, 300	1, 023, 500
West South Central	8	7	1, 213, 800	1, 243, 300	1, 181, 500	1, 210, 400
Mountain	9	9	572, 100	580, 000	572, 100	580, 000
Pacific	6	4	1, 946, 400	1, 991, 700	1, 475, 300	1, 512, 600

FOREIGN AND INSULAR

THE FAR EAST

Report for week ended June 4, 1927.—The following report for the week ended June 4, 1927, was transmitted by the Eastern Bureau of the Health Section of the Secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Maritime towns	Plague		Cholera		Smallpox		Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths		Cases	Deaths	Cases	Deaths	Cases	Deaths
Ceylon. Colombo	3	3	0	0	0	0	French Indo-China						
British India.							Saigon and Cholon	0	0	2	2	0	1
Karachi	0	0	0	1	3	2	Tourane	0	0	1	1	0	0
Bombay		2	...	1	31	25	Haiphong	0	0	37	37	0	0
Vizagapatam	...	0	...	0	1	1	China						
Calcutta	...	0	...	39	38	31	Tientsin	0	0	0	0	1	0
Madras	...	0	...	0	2	0	Hong Kong	0	0	0	0	6	6
Negapatam	...	0	...	5	...	0	Manchuria Changchun	0	0	0	0	1	0
Rangoon	...	2	...	1	23	7	Kwantung Port Arthur	0	0	0	0	1	1
Siam: Bangkok	0	0	3	1	0	0	Egypt: Alexandria	1	0	0	0	0	0

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Arabia.—Jeddah, Perim, Kamaran, Aden

Iraq.—Basra

Persia.—Mohammerah, Bender-Abbas, Bushire, Lingah.

British India.—Chittagong, Cochin, Tuticorin, Moulmein, Bassein.

Portuguese India.—Nova Goa

Federated Malay States.—Port Swettenham.

Straits Settlements.—Penang, Singapore

Dutch East Indies.—Batavia, Sabang, Belawan-Deli, Pontianak, Semarang, Samarinda, Menado, Cheribon, Makassar, Balikpapan, Tarakan, Padang.

Sarawak.—Kuching

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

Portuguese Timor.—Dilly

Philippine Islands.—Manila, Iloilo, Jolo, Cebu, Zamboanga.

China.—Amoy, Shanghai.

Macao.

Formosa.—Keelung, Takao.

Chosen.—Chemulpo, Fusan.

Manchuria.—Yingkow, Antung, Mukden, Harbin.

Kwantung.—Dairen.

Japan.—Yokohama, Nagasaki, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns.

New Guinea.—Port Moresby.

New Britain Mandated Territory.—Rabaul and Kokopo.

New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin

Samoa.—Apia

New Caledonia.—Noumea.

Fiji.—Suva.

Hawaii.—Honolulu

Society Islands.—Papeete.

AFRICA

Egypt.—Port Said, Suez.

Anglo-Egyptian Sudan.—Port Sudan, Suakin.

Eritrea.—Massaua.

French Somaliland.—Djibouti.

British Somaliland.—Berbera.

Italian Somaliland.—Mogadiscio.

Zanzibar.—Zanzibar.

Kenya.—Mombasa.

Tanganyika.—Dar-es-Salaam.

Seychelles.—Victoria.

Portuguese East Africa.—Mozambique, Beira, Lourenco-Marques.

Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.

Reunion.—Saint Denis.

Mauritius.—Port Louis.

Madagascar.—Majunga, Tamatave, Diego-Suarez.

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from:

Dutch East Indies.—Palembang, Bandjermasin, Surabaya

China.—Canton.

Union of Socialist Soviet Republics.—Vladivostok.

CANADA

Communicable diseases—Week ended June 11, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases in six Provinces of Canada for the week ended June 11, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Total
Cerebrospinal fever				1	2		3
Influenza	7					2	9
Lethargic encephalitis				1			1
Smallpox				17	1		18
Typhoid fever	1	1	157	18	2		179

Communicable diseases—Week ended June 18, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases in seven Provinces of Canada for the week ended June 18, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever				1				1
Influenza	4							4
Smallpox				17	5	13	15	50
Typhoid fever	1	3	106	8	3	1	1	123

Vital statistics—Quebec—April, 1927.—Births and deaths in the Province of Quebec for the month of April, 1927, were reported as follows:

Estimated population	2,604,000
Births	6,921
Birth rate per 1,000 population	31.89
Deaths	3,169
Death rate per 1,000 population	14.60
Deaths under 1 year	835
Infant mortality rate	120.64
Deaths from—	
Accidents (all)	52
Cancer	131
Cerebrospinal meningitis	8
Diabetes	26
Diarrhea	109
Deaths from—Continued.	
Diphtheria	44
Heart disease	353
Influenza	80
Measles	38
Pneumonia	277
Poliomyelitis (infantile paralysis)	4
Scarlet fever	14
Syphilis	10
Tuberculosis (pulmonary)	267
Tuberculosis (other forms)	62
Typhoid fever	186
Whooping cough	45

Typhoid fever—Montreal—January 2-June 25, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	Apr. 9, 1927	386	40
Jan. 15, 1927	4	3	Apr. 16, 1927	175	38
Jan. 22, 1927	1	2	Apr. 23, 1927	125	43
Jan. 29, 1927	3	1	Apr. 30, 1927	105	23
Feb. 5, 1927	1	0	May 7, 1927	106	19
Feb. 12, 1927	0	0	May 14, 1927	367	16
Feb. 19, 1927	1	2	May 21, 1927	770	26
Feb. 26, 1927	1	1	May 28, 1927	353	38
Mar. 5, 1927	9	1	June 4, 1927	239	37
Mar. 12, 1927	203	4	June 11, 1927	128	36
Mar. 19, 1927	383	14	June 18, 1927	87	
Mar. 26, 1927	568	22	June 25, 1927	75	23
Apr. 2, 1927	649	48			

HAWAII TERRITORY

Plague—Honokaa—May, 1927.—During the month of May, 1927, 2 fatal cases of plague were reported at Honokaa, Hawaii. The deaths occurred on May 17 and 23, respectively.

Rodent operations.—8,152 rodents were taken on the Island of Hawaii during the month and none found plague infected.

SCOTLAND

Vital statistics—January 1-March 31, 1927.—Births and deaths in Scotland for the period from January 1 to March 31, 1927, were reported as follows:

Estimated population	4,894,700	Deaths from—Continued	
Births	24,771	Diseases of the heart	2,181
Birth rate per 1,000 population (annual basis)	20.5	Dysentery	6
Deaths	19,445	Influenza (without complications)	256
Death rate per 1,000 population (annual basis)	16.4	Influenza (with other causes)	1,018
Deaths under 1 year	2,727	Lethargic encephalitis	25
Deaths under 1 year per 1,000 births	110	Malaria	2
Deaths from—		Measles	66
Automobile accidents	90	Nephritis	495
Bronchitis	1,576	Paratyphoid fever	2
Bronchopneumonia	1,116	Pneumonia	911
Cancer	1,671	Poliomyelitis	4
Cerebrospinal fever	30	Puerperal sepsis	58
Diabetes	121	Scarlet fever	42
Diarrhea and enteritis (under 2 years)	149	Tuberculosis (pulmonary)	924
Diphtheria	152	Tuberculosis (other forms)	397
		Typhoid fever	3
		Typhus fever	1
		Whooping cough	269

SENEGAL

Plague—Yellow fever—May 23-29, 1927.—During the week ended May 29, 1927, 25 cases of plague with 10 deaths were reported in Senegal, of which two cases occurred in the district of Thies and 23 cases with 10 deaths in three localities in the vicinity of Rufisque.

On May 27, 1927, three fatal cases of yellow fever were reported in Senegal, of which one case occurred at M'Bour and two cases at Tivaouane.

UNION OF SOUTH AFRICA

Plague—Cape Province—May 8-14, 1927.—During the week ended May 14, 1927, a fatal case of plague was reported in Maraisburg district, Cape Province, occurring in a native on Rietfontein Farm.

Typhus fever—April, 1927.—During the month of April, typhus fever was reported as follows: Cases, 55; deaths, 8, occurring in the native population and distributed as follows: Cape Province—cases, 42; deaths, 5. Natal—cases, 7; deaths, 3. Orange Free State—cases, 5; Transvaal—1 case. Two cases were reported in Europeans. During the week ended May 14, 1927, outbreaks of typhus fever were reported in the Cape Province and the Orange Free State.

Cape Town—Communicable diseases—April 2-29, 1927.—Communicable diseases were reported at Cape Town, Cape Province, during the four weeks ended April 29, 1927, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Cerebrospinal meningitis	2	2	Pneumonia	32	24
Diarrhoea and enteritis		49	Scarlet fever	14	
Diphtheria	18	1	Tuberculosis	85	40
Influenza	10	5	Typhoid fever	24	1
Measles		2			

YUGOSLAVIA

Communicable diseases—May, 1927.—During the month of May, 1927, communicable diseases were reported in Yugoslavia as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	22	1	Measles	1,790	36
Cerebrospinal meningitis	13	3	Scarlet fever	505	95
Diphtheria	104	14	Tetanus	25	16
Dysentery	22		Typhoid fever	132	17
Influenza	138	2	Typhus fever	4	
Lethargic encephalitis	2	1	Whooping cough	233	5

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended July 8, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Swatow	May 15-21	5	3	
India:				
Rangoon	May 8-14	2	1	
Siam				May 8-14, 1927: Cases, 19; deaths, 11.
Bangkok	May 8-14	4	1	Apr. 1-May 14, 1927: Cases, 445; deaths, 307.

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended July 8, 1927—Continued

PLAGUE

Place	Date	Cases	Deaths	Remarks
Ceylon:				
Colombo	May 8-14	2		Plague rats, 3
Greece:				
Patras	June 5-11	1		
Hawaii.				
Hanokaa	May, 1927	2	2	
India				Apr 24-May 7, 1927: Cases, 2,702, deaths, 2,098
Rangoon	May 8-14	2	3	
Java:				
Batavia	May 8-14	18	18	Province
East Java and Madura—Surabaya	Apr. 24-30	10	9	
Senegal				May 23-29, 1927. Cases, 25; deaths, 10.
Rufisque	May 23-29	23	10	In vicinity, at 3 localities.
Thies District	do	2		
Siam				May 8-14, 1927 Cases, 1; deaths, 1
Bangkok	May 8-14	1	1	Apr. 1-May 14, 1911 Cases, 8; deaths 7
Union of South Africa:				
Cape Province—Maraisburg District	do	1	1	Native.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Brazil:				
Rio de Janeiro	May 22-28	1		
Canada	June 5-18			Cases, 68
Alberta				June 12-18, 1927 Cases, 15.
Calgary	June 12-18	3		
Manitoba				June 5-18, 1927 Cases 6
Winnipeg	June 18-24	1		
Ontario				June 5-18, 1927, Cases, 34.
Ottawa	June 19-25	6		
Saskatchewan	June 12-18	13		
China				
Chefoo	May 8-14			Present
Foochow	do			Do
Manchuria—Dairen	May 2-8	3	3	
Tientsin	May 8-21	7		
India				Apr 24-May 7, 1927 Cases, 16,616, deaths, 4,005.
Karachi	May 22-28		2	
Rangoon	May 8-14	14	5	
Java				
Batavia	May 8-14	1		Province
East Java and Madura—Surabaya	Apr. 24-30	1		
Latvia				Apr. 1-30, 1927 1 case
Siam				May 8-14, 1927 Cases, 11, deaths, 2
Bangkok	May 8-14	2	1	

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Latvia				Apr 1-30, 1927 Cases, 12
Palestine				May 24-June 6, 1927. Cases, 3.
Haifa	May 24-June 6	2		
Safad	May 24-30	1		
Union of South Africa				April, 1927: Cases, 55; deaths, 8. Native. In Europeans, cases, 2.
Do	May 8-14			Outbreaks.
Cape Province				April, 1927 Cases, 42; deaths, 5. Native.
Do	May 8-14			Outbreaks.
Natal				April, 1927. Cases, 7; deaths, 3. Native.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended July 8, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Union of South Africa—Contd.				
Orange Free State				April, 1927: Cases, 5. Native.
Do	May 8-14			Outbreaks.
Transvaal				April, 1927: Cases, 1. Native.
Yugoslavia				May, 1927: Cases, 4.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Senegal				May 27, 1927: Cases, 3.
M'Bour	May 27	1	1	
Tivaouano	do	2	2	

Reports Received from June 25 to July 1, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
India				Apr. 17-23, 1927 Cases, 5,940; deaths, 3,220.
Bombay	May 8-14	1		
Calcutta	do	119	85	
Indo-China (French).				
Saigon	Apr. 30-May 6	54	37	Including Cholon
Siam				May 1-7, 1927 Cases, 32, deaths, 16.
Bangkok	May 1-7	9	1	Apr. 1-May 7, 1927. Cases, 426; deaths, 296.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Ceylon:				
Colombo	May 1-7	1	1	
Egypt				May 21-27, 1927: Cases, 1. Total from Jan. 1-May 27, 1927: Cases, 40; corresponding period, 1926. Cases, 43.
Tanta District	May 21-27	1		
Greece:				
Patras	May 30-June 5	1		
India				Apr. 17-23, 1927: Cases, 2,189; deaths, 1,480.
Bombay	May 8-14	25	23	
Java:				
Batavia	May 1-7	16	16	Province.
East Java and Madura—				
Pasoeroean Residency	May 9			Outbreak reported at Ngadiwono.
Surabaya	Apr. 17-23	11	12	
Madagascar				Mar. 16-31, 1927: Cases, 96; deaths, 86. Bubonic, 42; pneumonic, 21; septicemic, 33, cases.
Province—				
Ambositra	Mar. 16-31	15	10	Bubonic, 11; pneumonic, 1; septicemic, 3.
Antisirabe	do	1	1	Septicemic.
Miarinarivo (Itasy)	do	27	27	Bubonic, 3; pneumonic, 9; septicemic, 15.
Moramanga	do	6	6	Bubonic, 3; septicemic, 3.
Tananarive	do	43	38	Bubonic, 24; pneumonic, 11; septicemic, 8.
Tananarive Town	do	4	4	Bubonic, 1; septicemic, 3.
Siam				Apr. 1-May 7, 1927: Cases, 7; deaths, 6.
Tunisia	Reported May 20	15		In districts of Sfax and Susa.
Turkey:				
Constantinople	May 13-19	1		
Union of South Africa:				
Cape Province—				
Maraisburg District	May 1-7	1	1	Native.

[1] From medical officers of the Public Health Service, American consuls, and other sources. For reports received from January 2 to June 24, 1927, see Public Health Reports for June 24, 1927. The tables of epidemic diseases are terminated semiannually and new tables begun.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to July 1, 1927—Continued

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	May 11-20	4		
Oran	May 21-31	15		
British South Africa:				
Northern Rhodesia	Apr. 30-May 6	1		Native.
Canada:				
British Columbia—				
Vancouver	May 23-29	2		
Manitoba—				
Winnipeg	June 12-18	4		
Ontario—				
Ottawa	do	4		
China:				
Amoy	May 8-14	1		
Hong Kong	do	4	2	
Manchuria—				
Ssupingkai	do	1		
Chosen:				
Chinnampo	Apr. 1-30	1		
Fusan	do	1		
Seishin	do	1		
Egypt:				
Alexandria	May 21-27	3	1	
Great Britain:				
England and Wales	May 22-June 4			Cases, 520.
London	May 15-21	1		
Scotland—				
Dundee	May 29-June 4	3		
India				Apr. 17-23, 1927: Cases, 8,604; deaths, 1,950.
Bombay	May 8-14	58	33	
Calcutta	do	64	47	
Karachi	May 15-21	4	1	
Mexico:				
San Luis Potosi	May 29-June 4		2	
Tampico	June 1-10	1	1	
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in two localities.
Persia:				
Teheran	Feb. 21-Mar. 21		1	
Poland	Apr. 10-16	1		
Portugal:				
Lisbon	May 29-June 4	3		
Siam				May 1-7, 1927: Cases, 6; deaths, 3.
Bangkok	May 1-7	2	2	
Spain:				
Valencia	May 29-June 4	2		
Union of South Africa:				
Transvaal—				
Barberton District	May 1-7			Outbreaks.

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	May 11-20	9		
Oran	May 21-31	4		
Chosen:				
Seoul	Apr. 1-30	1		
Czechoslovakia				Apr. 1-30, 1927: Cases, 21.
Egypt:				
Alexandria	May 21-27	1		
Estonia				Apr. 1-30, 1927: Case, 1.
Mexico:				
Mexico City	May 29-June 4	2		Including municipalities in Federal District.
Palestine:				
Mahnaim	May 17-23	1		In Safad District.
Safad	do	1		
Portugal:				
Lisbon	May 29-June 4	1		
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa:				
Cape Province—				
Glen Grey District	May 1-7			Outbreaks.
Qumbu District	do			Do.

TREASURY DEPARTMENT

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SPECIAL ARTICLES

B. Coli Data Obtained from Water Purification Studies

Summary of Notifiable Diseases in Large Cities, 1926

UNITED STATES
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UNITED STATES PUBLIC HEALTH SERVICE

HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

Asst Surg Gen C. C. PIERCE, *Chief of Division*

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PUBLIC HEALTH REPORTS

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EXPERIMENTAL STUDIES OF WATER PURIFICATION

III. DISCUSSION OF B. COLI RESULTS OBTAINED FROM PRIMARY SERIES OF EXPERIMENTS

By H. W. STREETER, *Sanitary Engineer, United States Public Health Service*

In two previous papers,[1] a description has been given of an experimental water purification plant constructed and under operation by the Public Health Service at Cincinnati, Ohio, and a review of the results obtained from the primary series of experiments, which was begun on October 1, 1924, and extended to December 31, 1925. In the present article, the third of the series, it is proposed to discuss more fully the results of this series of experiments which bear more especially on the *B. coli* relationships.

The experiments in question, as stated in one of the papers above noted, indicated that the maximum *B. coli* index [2] of the raw water, consistent with producing an *unchlorinated* filter effluent conforming to the present United States Treasury Department *B. coli* Standard,[3] was about 100 per 100 c. c., and that the maximum raw water index consistent with producing a *chlorinated* filter effluent meeting the same standard was about 6,000 per 100 c. c. These findings confirmed closely the results obtained previously from a survey of 16 municipal water purification plants made under conditions of routine operation,[4] the results having indicated that the maximum raw water *B. coli* indices, respectively, consistent with producing unchlorinated and chlorinated effluents meeting the revised Treasury Department Standard, were 60 and 5,000 per 100 c. c.

In the foregoing paper the *B. coli* data were considered only in respect to the relations observed as between the *B. coli* content of the raw water, expressed in terms of the ordinary *B. coli* index, and the corresponding content of the effluents from various stages of treatment. In the present paper it is proposed to discuss the *B. coli* data from the following viewpoints:

1. The numerical interpretation of the results of individual *B. coli* tests.

[1] Public Health Reports, vol. 41, No. 40, Oct. 1, 1926, pp. 2121-2146. (Reprint No. 1114.)
[2] Expressed in terms of the usual *B. coli* index, originated by Prof. Earle B. Phelps.
[3] Public Health Reports, vol. 40, No. 15, Apr. 10, 1925, pp. 693-722. (Reprint No. 1029.)
[4] The results of this survey have been set forth in a detailed report soon to be published.

2. The effects on the relationships above noted resulting from the conversion of the *B. coli* data from terms of the *B. coli* index to those of the "most probable numbers" of *B. coli*.

3. The relations between the indicated average *B. coli* densities in the unchlorinated and chlorinated filter effluents resulting from calculations based on two different systems of sample dilutions.

4. The results of a parallel comparison of *B. coli* enumerations based on fermentation tube tests and of the acid-colony count obtained from direct platings of samples on the Ayers-Rupp medium.

THE NUMERICAL INTERPRETATION OF INDIVIDUAL B. COLI TESTS

In the routine tests for *B. coli* which have been made in connection with the experimental work, two main objectives have been kept in mind, namely, (*a*) to provide a basis for *B. coli* enumerations such that the results obtained on samples of the raw water and of the effluents from various stages of treatment would be strictly comparable with each other, and (*b*) to determine the conditions of raw water pollution under which the unchlorinated or the chlorinated filter effluent would conform, or fail to conform, to some designated standard of limiting *B. coli* density, such as, for example, the original or the revised United States Treasury Department Standard.

To satisfy the requirement (*a*) it was necessary to use a parallel system of dilutions of the sample for inoculation into the lactose broth tubes. To satisfy requirement (*b*) it was essential that samples of the unchlorinated and chlorinated filter effluents be examined in accordance with the usual standard procedure recommended for use in testing conformance of samples to the Treasury Department Standard, namely, inoculation of five 10 c. c. portions into separate lactose broth fermentation tubes. Inasmuch as the samples of prefiltered water, including the raw water, were inoculated in single portions forming a geometric series of dilutions (in accordance with the usual practice), it was necessary to provide a corresponding series for the post-filter effluents, for the sake of consistency. Accordingly, the following system of dilutions was adopted, the figures showing the number of portions of specified quantity inoculated:

	0.0001 c. c.	0.001 c. c.	0.01 c. c.	0.1 c. c.	1.0 c. c.	10.0 c. c.
Raw water	1	1	1	1	1	----
Applied water [1]	1	1	1	1	1	----
Filtered-unchlorinated	----	----	----	1	1	5
Filtered-chlorinated	----	----	----	1	1	5

[1] Coagulated-settled water as applied to filters.

Ordinarily not more than three portions of prefilter samples were inoculated for a given test, the series being stepped up or down according to variations in the character of the water. In general,

however, a special effort was made to carry out the dilutions of the sample to an extent sufficient always to give a negative presumptive test for *B. coli* in the smallest portion tested. This condition is essential to a determinate enumeration of *B. coli* from fermentation tests.

The determination of *B. coli* in all samples was based on the "completely confirmed test," as defined in the latest Standard Methods[5] of the American Public Health Association. The differentiation between *B. coli* and *B. aerogenes* was omitted from the routine work, though a series of such tests was made during the early portion of the studies.

Although the bacteriological results obtained from the series of experiments discussed in this paper were given statistical analysis largely in the form of averages, it was necessary, as a basis of averaging, to assign a definite result to each individual determination. For the *B. coli* results, this was a fairly simple procedure in considerably over 95 per cent of the cases, in which the result of the individual test was consistent as between the various dilutions of the sample inoculated. In a very small proportion of the cases, however, an anomalous result or a "skip" was obtained; that is, a negative result was observed in a portion larger (usually the next larger) than the smallest one giving a positive result. In testing samples of the unchlorinated and chlorinated filter effluents negative results ordinarily were obtained in the single portions, 0.1 c. c. or 1.0 c. c., coincidently with less than five positive results in the five 10 c. c. portions. Occasionally, however, a positive result would be observed in one of the two smaller sample portions under these same circumstances, giving another type of "skip." In all of these instances the procedure followed was that of "banking" the positive result into the next lower dilution giving a negative result; for example, if the results as observed were as follows:

0.01 c. c.	0.1 c. c.	1.0 c. c.
+	−	+

the results would be "banked" thus:

0.01 c. c.	0.1 c. c.	1.0 c. c.
−	+	+

A subsequent analysis of data given by Reed[6] on the interpretation of *B. coli* fermentation tests from a standpoint of the theory of probability has indicated that the method of "banking" anomalous

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[5] Standard Methods for the Examination of Water and Sewage. American Public Health Association, Sixth Edition, 1925, pp. 103–110.

[6] Public Health Reports, vol. 40, No. 15, Apr. 10, 1925, Appendix III. (Reprint No. 1029.). Also, Manual of American Water Works Practice, 1925, pp. 136–145.

results, as above described, gives results approximating very closely the most probable numbers of *B. coli*. This point will be made more clear in the discussion which immediately follows.

EXPRESSION OF B. COLI RESULTS IN TERMS OF THE "MOST PROBABLE NUMBERS"

The method of enumerating *B. coli* most commonly followed in this country in connection with water works practice is based on the *B. coli* index, which is calculated as the reciprocal of the highest dilution, expressed as a fraction or multiple of a cubic centimeter, giving a positive test for *B. coli*. Thus, if the highest positive dilution be 0.01 c. c., the *B. coli* index is computed as being 100 per cubic centimeter, or 10,000 per 100 c. c.

The numerical results given by the index method, as applied to individual tests, fail to give even a close approximation of the true result as indicated by the theory of probability, as was originally brought out by McCrady,[7] and later amplified by Stein,[8] Wolman and Weaver,[9] Yule and Greenwood,[10] and Reed,[11] who endeavored, by various devices, to simplify the treatment so as to facilitate the calculation of the "most probable numbers" of *B. coli* from a given combination of fermentation-tube results. The treatment given by Reed, which is in some respects, at least, the most satisfactory one thus far developed, has established a definite basis for calculating, within clearly defined limits of precision, the most probable numbers of *B. coli* from a given combination of results in a series of sample dilutions. As an example of such a calculation, the following tabulation of results given by him, in the article above cited, is inserted:

	100 c. c.	10 c. c.	1 c. c.	0.1 c. c.	0.01 c. c.	Most probable number (M.P.N.) per 100 c. c.	*B. coli* index per 100 c. c.
(a)	+	−	−	−	−	2.3	1.0
(b)	+	−	+	−	−	9.4	10.0
(c)	+	+	−	−	−	23.0	10.0
(d)	+	+	−	+	−	94.4	100.0
(e)	+	+	+	−	−	231.2	100.0

Reference to cases (*a*), (*c*), and (*e*) in the tabulation shows that, when the results are not anomalous (i. e., when no "skips" exist), the "most probable numbers" of *B. coli* are equal approximately to

[7] Journal of Infectious Diseases, vol. 17, No. 1, July, 1915.

[8] Stein, M. F.: The Interpretation of *B. coli* Test Results on a Numerical and Comparative Basis. Jour. of Bact., vol. 4, No. 3, May, 1919.

[9] Wolman, A., and Weaver, H. L.: A Modification of the McCrady Method of the Numerical Interpretation of Fermentation-Tube Results. Jour. of Infec. Dis., vol 21, No. 3, May, 1919.

[10] Greenwood, J., Jr., and Yule, G. U.: On the Statistical Interpretation of Some Bacteriological Methods Employed in Water Analysis. Jour. of Hyg., vol. 16, No. 1, July, 1917.

[11] Loc. cit., p. 6.

two and three-tenths times the corresponding *B. coli* index. Where a "skip" is observed, as in cases (*b*) and (*d*), the most probable numbers are very closely equivalent to the *B. coli* index obtained by "banking" the results as above described.

In enumerating *B. coli* from tests made in five 10 c. c. portions of the same sample, Reed has given a table of the most probable numbers obtained from each result. In the following tabulation these results are given, together with the corresponding *B. coli* index, as ordinarily computed:

	(−)	(+)	*B. coli* per 100 c. c.	
			M. P. N.	*B. coli* index
(*a*)	5	0	0	0
(*b*)	4	1	2.2	2
(*c*)	3	2	5.1	4
(*d*)	2	3	9.2	6
(*e*)	1	4	16.1	8
(*f*)	0	5	([1])	10+

[1] Indeterminate.

It will be noted that, in this instance, the ratio between the two series of results is not constant, as in the preceding case, where single portions in geometric progression were tested, and that the series above given does not cover anomalous cases, in which single 0.1 c. c. or 1 c. c. portions of a sample, tested in addition to the five 10 c. c. portions, may give a positive result coincident with fewer than five positive results in the 10 c. c. portions of the same sample. For cases of this kind, the theory of probability, which is the basis of the "most probable number" calculation, provides a clear-cut mathematical solution, each anomaly representing a definite probability incidental to random sampling. The contrary is true of the *B. coli* "index" calculation, which accords no solution of anomalous results other than some procedure such as that of "banking," previously described.

Using the formulae developed by Reed, Sanitary Engineer J. K. Hoskins, of the Public Health Service, has made an extensive series of calculations of the "most probable numbers" of *B. coli* corresponding to test results obtained in various combinations of sample dilutions. Through his courtesy, Tables 1 and 2, in which are summarized the results of his calculations, are herewith presented. In Table 1 are given the "most probable numbers" of *B. coli* as derived from each one of the six possible combinations of test results obtainable in three sample dilutions forming a geometric series. The dilutions are shown in six different stages, ranging from 10 c. c. to 0.000001 c. c. of the sample. All of the results except those in lines (*a*) and (*c*), reading horizontally, are derived from anomalous cases

involving a "skip" between a positive and a negative result in adjacent dilutions.

TABLE 1.—*Most probable numbers of B. coli per 100 c. c.*

[Three dilutions in geometric series]

	Result			Dilution					
				10 1 0.1	1.0 0.1 0.01	0.1 0.01 0.001	0.01 0.001 0.0001	0.001 0.0001 0.00001	0.0001 0.00001 0.000001
(a)	+	+	−	240	2,400	24,000	240,000	2,400,000	24,000,000
(b)	+	−	+	95	955	9,550	95,500	955,000	9,550,000
(c)	+	−	−	23	231	2,310	23,100	231,000	2,310,000
(d)	−	+	+	19	190	1,900	19,000	190,000	1,900,000
(e)	−	+	−	9	94	940	9,400	94,000	940,000
(f)	−	−	+	9	90	900	9,000	90,000	900,000

TABLE 2.—*Most probable numbers of B. Coli per 100 c. c. of water*

[When the analysis of a water is based on the examination of five portions of 10 c. c., one of 1 c. c., and one of 0.1 c. c.]

	Number of 10 c. c. tubes: Positive	Number of 10 c. c. tubes: Negative	One 1 c. c. tube	One 0.1 c. c. tube	Most probable number of *B. coli* per 100 c. c. of water		Number of 10 c. c. tubes: Positive	Number of 10 c. c. tubes: Negative	One 1 c. c. tube	One 0.1 c. c. tube	Most probable number of *B. coli* per 100 c. c. of water
(a)	5	0	+	+	(1)	(d)	2	3	+	+	10.3
	5	0	+	−	240.0		2	3	+	−	7.6
	5	0	−	+	95.7		2	3	−	+	7.5
	5	0	−	−	38.4		2	3	−	−	5.0
(b)	4	1	+	+	26.6	(e)	1	4	+	+	6.7
	4	1	+	−	20.7		1	4	+	−	4.4
	4	1	−	+	20.2		1	4	−	+	4.4
	4	1	−	−	15.3		1	4	−	−	2.2
(c)	3	2	+	+	15.8	(f)	0	5	+	+	4.0
	3	2	+	−	12.3		0	5	+	−	2.0
	3	2	−	+	12.1		0	5	−	+	2.0
	3	2	−	−	8.8		0	5	−	−	0

[1] Indeterminate.

In Table 2 are tabulated the "most probable numbers" of *B. coli* as derived by Mr. Hoskins from various combinations of results obtained from tests of samples in single 0.1 c. c. and 1 c. c. portions and five 10 c. c. portions. A study of this table will show that every possible combination of results in the portions given has been covered, including both the consistent and the anomalous cases. It is of interest to note that a positive result in 0.1 c. c., coincident with a negative result in 1 c. c. and one or more negative results in 10 c. c. gives a "most probable number" figure only slightly higher than that obtained when the results in the two single portions are reversed. In the former case the probability of occurrence of the result indicated is sufficiently remote to have little influence on the calculated figure.

COMPARISON OF B. COLI DATA EXPRESSED IN TERMS OF THE PHELPS INDEX AND IN TERMS OF THE MOST PROBABLE NUMBERS

In the preceding paper of this series,[12] a table was given showing the relationship observed between the *B. coli* index of the raw water and that of the effluents from successive stages of treatment. In Table 3, below, is given a reproduction of these figures, together with a parallel tabulation of the same data expressed in terms of the "most probable numbers" of *B. coli* derived by averaging individual results obtained as in Tables 1 and 2.

TABLE 3.—*Comparative numbers of B. coli as measured, respectively, in terms of the B. coli index and the "most probable numbers," observed in the raw water and in the effluents from successive stages of treatment, coincidently with averages of raw water numbers falling within specified corresponding ranges*

Method of count [1]	Corresponding raw water *B. coli* ranges (per 100 c. c.)	No. of items	Average turbidity p. p. m.	Average *B. coli* (per 100 c. c.): Raw	Applied	Filtered	Chlorinated
Ind.	0- 5,000	67	77	2,450	1,050	10.9	0.48
M. P. N.	0- 11,500			5,680	2,650	23.0	.60
Ind.	5,001- 10,000	102	78	7,690	3,020	29.0	1.1
M. P. N.	11,501- 24,000			18,000	6,920	58.0	2.1
Ind.	10,001- 50,000	76	93	33,190	7,980	108.0	3.1
M. P. N.	24,001-115,000			75,700	18,700	245.0	5.2
Ind.	50,001-100,000	39	105	68,800	14,400	158.0	6.7
M. P. N.	115,001-240,000			160,000	33,500	371.0	19.7
Ind.	Over 100,000	36	175	898,000	90,800	455.0	54.3
M. P. N.	Over 240,000			2,170,000	189,000	1,060.0	126.0

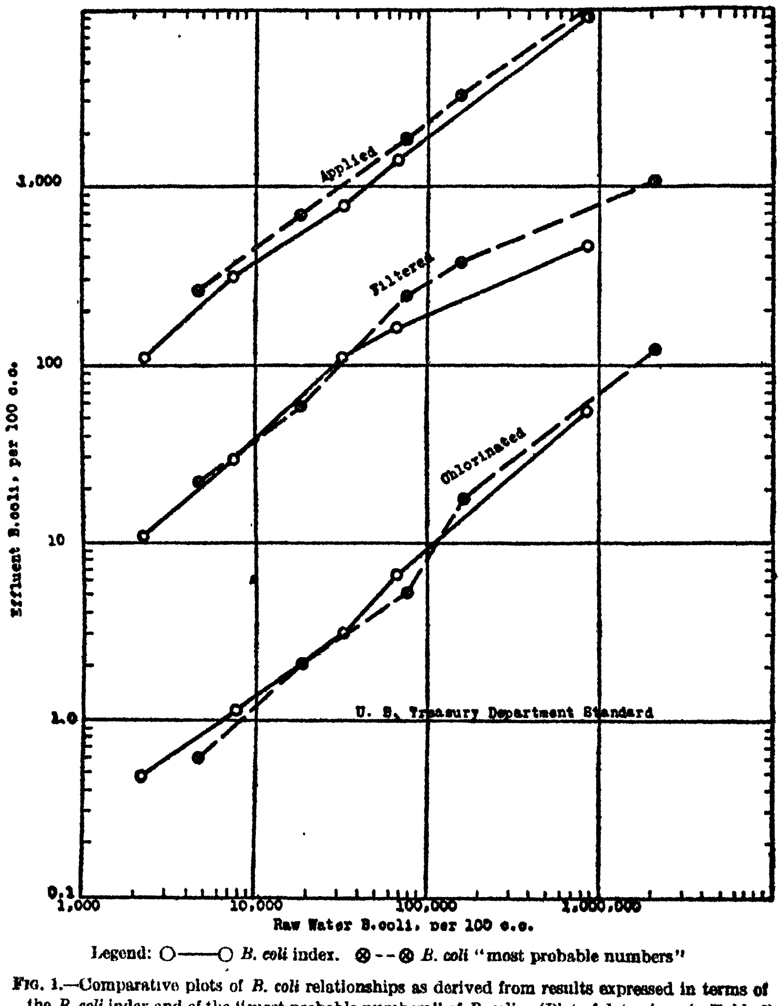
Method of count [1]	Residual per cent of raw water: Applied	Filtered	Chlorinated	Residual per cent of influent water: Applied	Filtered	Chlorinated
Ind.	42.9	0.44	0.020	42.9	1.00	4.4
M. P. N.	46.6	.40	.011	46.6	.87	2.6
Ind.	39.3	.39	.014	39.3	.99	3.7
M. P. N.	38.5	.32	.012	38.5	.84	3.6
Ind.	24.1	.33	.009	24.1	1.35	2.9
M. P. N.	24.4	.32	.007	24.4	1.31	2.1
Ind.	20.9	.23	.010	20.9	1.10	4.2
M. P. N.	20.9	.23	.012	20.9	1.11	5.3
Ind.	10.1	.05	.006	10.0	.50	11.9
M. P. N.	8.7	.05	.006	8.7	.56	11.9

[1] Ind.=Phelps index. M. P. N.=most probable numbers

A comparison of these two tabulations and of graphs constructed from them, as illustrated in Figure 1, shows that the relationship between the raw water and the several effluents in respect to their *B. coli* content is not materially altered by conversion of the results into terms of the "most probable numbers." This is brought out, further, by the fact that the residual percentages of *B. coli*, as derived from numbers expressed in the two respective terms, falling into corresponding raw water ranges, are very nearly equivalent to each

[12] Public Health Reports, vol. 41, No. 40, Oct. 1, 1926, Pt II, Table I. (Reprint No. 1114.)

other, though the actual respective numbers of *B. coli* on which they are based in each instance are divergent. The close accordance of the two series of relationships is due largely to the fact that, in the given series of samples, the ratio of the "most probable numbers" of *B. coli* to the corresponding numbers, as expressed in terms of the *B. coli* index, remains very nearly constant for various densities of



Legend: O——O *B. coli* index. ⊗ - - ⊗ *B. coli* "most probable numbers"

FIG. 1.—Comparative plots of *B. coli* relationships as derived from results expressed in terms of the *B. coli* index and of the "most probable numbers" of *B. coli*. (Plot of data given in Table 3)

B. coli, being modified only by corrections applied to anomalous results and by a slight variation of the ratio in samples of the filtered and chlorinated effluents tested in five 10 c. c. portions.

The same indications as above noted are given further in Table 4, in which the relationships between the numbers of *B. coli* observed in the raw water and coincidentally in the several effluents have been

derived from the same data, classified, first, according to seasonal periods, and second, according to corresponding ranges in the numbers of raw water *B. coli*, as expressed in the two terms. In Table 5 a similar procedure has been followed, except that raw water turbidity, rather than season, is the basis of primary classification of the data. The *B. coli* index figures given in these two tables have been reproduced from tabulations given in the preceding paper [13] of this series.

TABLE 4.—*Comparative numbers of B. coli, expressed, respectively, in terms of the B. coli index and the "most probable numbers," as derived from parallel groupings of the B. coli data according to season and raw water B. coli content*

	Average *B. coli* (per 100 c. c.)				Per cent of raw water			Per cent of influent water		
	Raw	Applied	Filtered	Chlorinated	Applied	Filtered	Chlorinated	Applied	Filtered	Chlorinated
Winter season average.										
Index [1]	342,000	31,400	216	21.9	9.2	0.063	0.007	9.2	0.69	11.5
M. P. N.[1]	839,000	76,500	518.8	58.4	9.1	0.062	0.007	9.1	0.68	11.3
Mid-season average:										
Index	47,800	15,100	38.0	3.5	31.6	0.079	0.007	31.6	0.25	9.2
M. P. N.	116,000	25,900	86.7	7.7	22.3	0.075	0.007	22.3	0.33	9.0
Summer season average.										
Index	65,900	7,890	177	4.0	12.0	0.27	0.006	12.0	2.2	2.3
M. P. N.	154,000	19,350	402.5	8.7	12.6	0.26	0.006	12.6	2.1	2.2
Winter season—Subgrouping:										
Index (0-5000)	3,140	914	4.9	0.44	29.1	0.15	0.014	29.1	0.54	9.0
M. P. N. (0-11500)	7,260	2,070	9.5	0.30	28.5	0.13	0.004	28.5	0.46	3.2
Index (5001-10000)	7,770	2,180	10.2	0.95	28.1	0.13	0.012	28.1	0.47	9.3
M. P. N. (11501-24000)	18,100	5,570	21.8	1.48	30.7	0.12	0.008	30.7	0.39	6.8
Index (10001-50000)	33,100	3,920	209.0	4.8	11.8	0.63	0.014	11.8	5.3	2.3
M. P. N. (24001-115000)	74,000	8,170	484.0	6.39	11.0	0.65	0.009	11.0	5.9	1.3
Index (50001-100000)	74,600	29,600	172.0	20.0	39.8	0.23	0.039	39.8	0.58	16.9
M. P. N. (115001-240000)	170,900	69,600	410.0	67.6	40.7	0.24	0.040	40.7	0.59	16.5
Index (over 100000)	1,080,000	86,600	519.0	66.0	8.0	0.048	0.006	8.0	0.60	12.7
M. P. N. (over 240000)	2,700,000	215,000	129.0	162.0	8.0	0.048	0.006	8.0	0.60	12.6
Mid-season—Subgrouping:										
Index (0-5000)	3,510	1,480	6.2	0.56	42.4	0.18	0.016	42.2	0.42	9.0
M. P. N. (0-11500)	7,980	3,660	12.3	0.66	45.8	0.15	0.008	45.8	0.34	5.4
Index (5001-10000)	7,810	3,320	26.6	0.76	42.5	0.34	0.001	42.5	0.80	2.9
M. P. N. (11501-24000)	23,800	7,470	62.3	1.42	31.3	0.26	0.006	31.3	0.83	2.3
Index (10001-50000)	32,500	10,200	41.9	1.8	31.4	0.13	0.003	31.4	0.41	4.3
M. P. N. (24001-115000)	76,800	23,200	94.3	3.19	30.2	0.12	0.004	30.2	0.41	3.4
Index (50001-100000)	72,100	13,900	24.3	1.3	19.3	0.034	0.002	19.3	0.17	5.3
M. P. N. (115001-240000)	160,500	31,980	43.0	1.9	19.9	0.027	0.001	19.2	0.13	4.4
Index (over 100000)	1,000,000	316,000	390.0	52.0	31.6	0.039	0.005	31.6	0.12	13.3
M. P. N. (over 240000)	2,400,000	442,000	936.0	123.0	18.4	0.039	0.005	18.4	0.21	13.2
Summer season—subgrouping:										
Index (0-5000)	2,170	([2])	73.8	0.63	([2])	3.4	0.029	([2])	([2])	0.86
M. P. N. (0-11500)	4,510	([2])	168.6	0.85	([2])	3.7	0.019	([2])	([2])	0.51
Index (5001-10000)	8,490	4,960	127.0	2.7	58.4	1.5	0.032	58.4	2.6	2.1
M. P. N. (11501-24000)	18,680	11,460	197.0	5.88	61.3	1.05	0.032	61.3	1.7	2.9
Index (10001-50000)	34,000	8,600	195.0	3.1	25.3	0.57	0.009	25.3	2.3	1.6
M. P. N. (24001-115000)	67,200	20,300	455.0	6.01	30.2	0.68	0.009	30.2	2.2	1.3
Index (50001-100000)	65,300	8,400	193.0	5.4	12.9	0.30	0.008	12.9	2.3	2.8
M. P. N. (115001-240000)	153,800	19,900	457.0	11.62	12.9	0.30	0.008	12.9	2.3	2.6
Index (over 100000)	283,000	11,000	200.0	7.6	3.9	0.071	0.003	3.9	1.8	3.8
M. P. N. (over 240000)	668,000	26,000	476.0	18.2	3.9	0.071	0.003	3.9	1.8	3.8

[1] Index = *B. coli* index; M. P. N. = most probable number.
[2] Only one result available; omitted.
[13] Public Health Reports, vol. 41, No. 40, Oct. 1, 1926, II, Tables 3 and 5. (Reprint No. 1114.)

TABLE 5.—*Comparative numbers of B. coli, expressed, respectively, in terms of the B. coli index and the "most probable numbers," as derived from parallel groupings of the B. coli data according to raw water turbidity and B. coli content*

	Average *B. coli* (per 100 c. c.)				Per cent of raw water			Per cent of influent water		
	Raw	Applied	Filtered	Chlorinated	Applied	Filtered	Chlorinated	Applied	Filtered	Chlorinated
AVERAGES—ALL B. COLI RANGES										
Turbidity=0-10:										
Index	34,600	7,100	37	1.8	20.5	0.11	0.0052	20.5	0.52	4.9
M. P. N.	70,800	16,700	53.8	2.8	19.7	.07	.0035	19.7	.34	5.2
Turbidity=11-100.										
Index	84,500	12,800	84	3.6	15.1	.099	.0043	15.1	.66	4.3
M. P. N.	200,000	31,300	191	7.2	15.7	.096	.0036	15.7	.61	3.8
Turbidity=over 100										
Index	285,000	30,600	227	24.0	10.7	.080	.0084	10.7	.74	10.6
M. P. N.	698,000	63,100	539	57.2	9.0	.077	.0082	9.0	.85	10.6
AVERAGES—B. COLI SUB-RANGES										
Turbidity=0-10.										
Index (0-5000)	3,000	3,840	7.8	1.3	100+	.26	.043	100+	.2	16.6
M. P. N. (0-11500)	5,432	10,200	16.2	1.5	100+	.30	.028	100+	.16	9.3
Index (5001-10000)	8,300	3,940	47.0	.5	47.5	.57	.006	47.5	1.2	1.1
M. P. N. (11501-24000)	19,200	8,790	60.7	.6	45.8	.32	.003	45.8	.69	1.0
Index (10001-50000)	35,800	11,100	20.0	3.4	31.0	.056	.009	31.0	.18	17.0
M. P. N. (24001-115000)	81,600	24,100	32.5	5.1	29.5	.040	.006	29.5	.14	15.7
Index (50001-100000)	69,700	13,300	29.0	1.1	19.1	.042	.002	19.1	.22	3.8
M. P. N. (115001-240000)	157,000	30,800	47.9	1.7	19.6	.031	.001	19.6	.16	3.6
Index (over 100000)	505,000	10,000	100.0	5.0	2.0	.020	.001	2.0	1.0	5.0
M. P. N. (over 240000)	1,200,000	24,000	240.0	11.5	2.0	.020	.001	2.0	1.0	5.0
Turbidity=11-100.										
Index (0-5000)	3,120	1,550	25.0	.7	49.7	.80	.022	49.7	1.6	2.8
M. P. N. (0-11500)	7,020	3,640	60.7	.8	51.9	.86	.011	51.9	1.7	1.3
Index (5001-10000)	7,660	3,610	19.0	1.2	47.1	.25	.016	47.1	.53	6.3
M. P. N. (11501-24000)	17,300	8,790	28.4	2.2	50.8	.16	.013	50.8	.32	7.8
Index (10001-50000)	33,200	9,210	91.0	1.3	27.7	.27	.004	27.7	.99	1.4
M. P. N. (24001-115000)	77,800	21,500	218.0	2.0	27.6	.28	.003	27.6	1.01	0.9
Index (50001-100000)	65,200	12,000	121.0	4.9	18.4	.19	.008	18.4	1.01	4.0
M. P. N. (115001-240000)	150,000	31,800	258.0	10.5	21.2	.17	.007	21.2	.81	4.1
Index (over 100000)	723,000	71,500	270.0	22.0	9.9	.04	.003	9.9	.38	8.1
M. P. N. (over 240000)	1,729,000	174,000	642.0	51.7	10.1	.04	.003	10.1	.37	8.1
Turbidity=over 100.										
Index (0-5000)	3,340	864	6.5	.4	25.9	.19	.012	25.9	.75	6.2
M. P. N. (0-11500)	7,880	1,620	13.7	32	20.6	.17	.004	20.6	.85	2.3
Index (5001-10000)	7,790	2,020	46.0	1.2	25.9	.59	.015	25.9	2.3	2.6
M. P. N. (11501-24000)	17,600	4,620	107.0	2.24	26.2	.61	.013	26.2	2.3	2.1
Index (10001-50000)	32,300	3,530	217.0	8.6	10.9	.67	.027	10.9	6.1	4.0
M. P. N. (24001-115000)	70,700	7,600	472.0	15.4	10.9	.67	.022	10.9	6.2	3.3
Index (50001-100000)	75,000	18,200	313.0	30.0	24.3	.42	.040	24.3	1.7	9.6
M. P. N. (115001-240000)	166,000	41,590	737.0	70.8	25.2	.44	.043	25.2	1.8	9.6
Index (over 100000)	949,000	94,900	506.0	66.0	10.0	.05	.007	10.0	.53	13.0
M. P. N. (over 240000)	2,380,000	198,000	1,230.0	161.0	18.3	.05	.007	8.3	.62	13.1

From the foregoing comparisons it is fairly evident that in so far as the basic relationships involved in these studies are concerned, the expression of *B. coli* results in terms of the *B. coli* index leads to substantially the same results as does their derivation in terms of "most probable numbers," the only notable difference being in the indicated maximum *B. coli* content of the raw water consistent with producing an effluent conforming to the revised Treasury Department

Standard. Expressed in terms of the "most probable numbers," this maximum is 9,000 rather than 6,000 per 100 c. c. (See fig. 1.) There appears to be little or no indication in the data, moreover, that either one of the two systems of enumeration gives a smoother series of correlations than does the other. There is little doubt, however, that the expression of the results in terms of the "most probable numbers" gives a closer approximation to the true density of *B. coli* in a given water. It is for this reason, and because this newer method of enumeration is likely to be more widely used in the future, that the *B. coli* data given in Tables 3, 4, and 5 have been compared, as shown in terms of the two respective measures.

INFLUENCE OF SYSTEM OF TEST DILUTIONS UPON INDICATED RELATIONS EXISTING BETWEEN NUMBERS OF B. COLI IN RAW WATER AND CORRESPONDING NUMBERS IN EFFLUENTS

In the preceding article[14] of this series a comparison was given of the baterial efficiency of the experimental water purification plant used for these experiments and the corresponding efficiency of five municipal Ohio River plants, under similar conditions of raw water pollution. In this connection it was stated: "In order to make a proper comparison of the *B. coli* data, it has been necessary to reduce the experimental results obtained from tests of the unchlorinated and chlorinated effluents to a basis of those derived from tests only of five 10-c. c. portions of each sample, owing to the fact that this method was followed at the five Ohio River plants during the year covered by the averages. This procedure involved recalculating in the experimental series, the *B. coli* index for each individual sample, after eliminating all results of tests of 1 c. c. and 0.1 c. c. portions, and reaveraging, on this basis, the results falling within the raw water range stated."

In view of the fact that it is the usual practice at a considerable number of municipal water purification plant laboratories to test only five 10-c. c. portions of the filtered and chlorinated effluents for the presence of *B. coli*, it may be of interest to show the comparative results obtained by including and by excluding from such results all tests for *B. coli* made in additional portions of 1 c. c. and 0.1 c. c. of samples of the two kinds of effluents specified. In Table 6 is given a parallel tabulation of the average numbers of *B. coli*, expressed in terms of the *B. coli* index, derived, first, as in Table 3, in which the results obtained from 1 c. c. and 0.1 c. c. portions of the filtered and chlorinated waters have been included in the group averages given for these two effluents, and, next, by excluding from these results all tests made in such portions, basing them only on tests of five 10-c. c. portions of each sample. In Table 6, however, both tabulations are

[14] Loc. cit., p. 22.

based on observations extending over a period of only 12 months (October, 1924, to September, 1925, inclusive), whereas in Table 3 the observations extended over 15 months, including the additional three months, October–December, 1925.

TABLE 6.[1]—*Comparison between average B. coli indices observed in filtered and chlorinated effluents, corresponding to averages of raw water indices falling within specified ranges, as determined from the same data. (A) By basing results on tests of samples in single 1 c. c. and 0.1 c. c. portions and five 10-c. c. portions, and (B) by excluding all results obtained in the 1 c. c. and 0.1 c. c. portions and including only those obtained in the five 10-c. c. portions*

Raw water *B. coli* range, index per 100 c. c.		Average *B. coli* index per 100 c. c.				Residual per cent of raw water		Residual per cent of influent water	
		Raw	Applied	Filtered	Chlorinated	Filtered	Chlorinated	Filtered	Chlorinated
0–5,000	A	3,210	1,350	16.0	0.52	0.50	0.016	1.2	3.2
	B	3,210	1,350	4.0	0.50	0.12	0.015	0.3	12.5
5,001–10,000	A	7,890	3,200	35.6	1.14	0.45	0.014	1.1	3.2
	B	7,890	3,200	5.7	0.81	0.07	0.010	0.2	14.2
10,001–50,000	A	33,300	8,250	111.0	3.1	0.33	0.009	1.4	2.8
	B	33,300	8,250	7.9	1.9	0.024	0.006	0.09	24.1
50,001–100,000	A	69,000	14,600	160.0	6.7	0.23	0.010	1.1	4.2
	B	69,000	14,600	9.0	3.1	0.013	0.004	0.06	34.4
Over 100,000	A	878,000	86,800	431.0	52.1	0.049	0.006	0.50	12.1
	B	878,000	86,800	8.8	5.0	0.001	0.0006	0.01	57.0

[1] Based on data covering the period Oct. 1, 1924, to Sept. 30, 1925.

On referring to Table 6 it is noted that the indicated *B. coli* indices of the filtered and chlorinated waters are much higher throughout the entire series "A," in which the results of tests of 1 c. c. and 0.1 c. c. portions of all samples were included, than in series "B," in which they were excluded [15] and the results based only on tests of five 10-c. c. portions. The corresponding residual percentages also are proportionately higher in the former case.

In Figure 2 is shown a comparative plot of the series "A" and "B" figures, respectively, as given in Table 4. For further comparison with these graphs, a plot is shown of the relationship between the *B. coli* index of the raw water and of the water applied to the filters, as derived from the same series of observations, and, in this instance, from tests made in single portions of each sample forming a geometric series progression. On referring to the chart it will be noted, first, that the slopes of the series "B" graphs are much flatter than those of series "A," owing to the fact that the *B. coli* index, as determined in series "B," is based on tests of only the five 10-c. c. portions of each sample and therefore can not have a maximum exceeding 10 per 100 c. c. It also will be noted that the graphs of series "A," based on the combined tests of five 10-c. c. portions, and, in addition, single

[15] The divergence is notably less, however, in the extreme lower ranges of *B. coli* density, bordering on that of the Treasury Department Standard.

1 c. c. and 0.1 c. c. portions, have slopes much more consistent with that of the raw: applied water graph than do those of series "B."

From these indications, it would appear that the inclusion of tests of 1 c. c. and 0.1 c. c. portions in all *B. coli* determinations on unchlorinated and chlorinated filter effluent samples gives results which are more consistent with those obtained by the geometric series

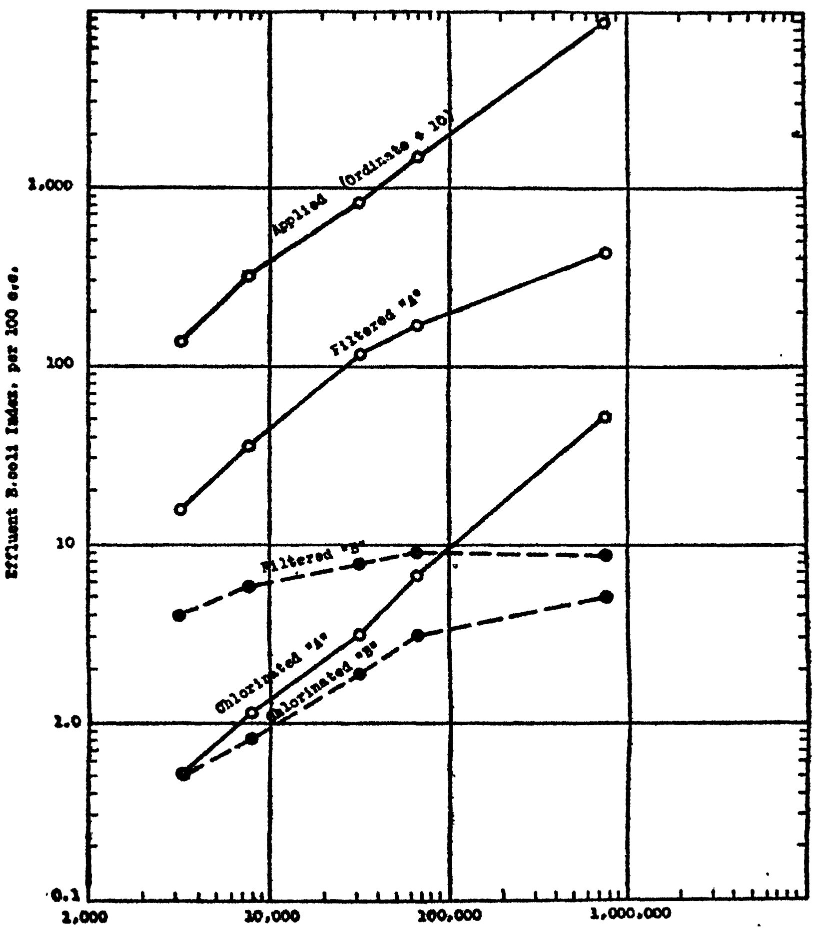


FIG. 2.—Comparative plot of data given in Table 6

"A"=Results based on tests of five 10-c. c. portions and of additional single 0.1-c. c. and 1.0-c. c. portions of all samples

"B"=Results based on tests of only five 10-c. c. portions of all samples

dilution method on parallel samples of the raw and applied waters. They should afford, therefore, a more reliable measure of the true relationship existing between the *B. coli* content of the raw water and that of the filtered and chlorinated waters named. These results indicate, furthermore, that the occasional appearance of *B. coli* in portions of these effluents smaller in volume than 10 c. c. may exert,

if detected, a very decided effect on the average numbers of *B. coli* as shown in such effluents over a given period, whether measured in terms of the *B. coli* index, as in the case at hand, or in those of the "most probable numbers," which readily can be shown to be similarly affected. It possibly might be contended that the effect thus shown, as in Table 6, gives an undue weight to merely occasional lapses in the quality of effluents of this type, which ordinarily may contain numbers of *B. coli* falling well within the range of tests of five 10-c. c. portions. It should be borne in mind, however, that the weight given to such results in this instance is exactly the same as is given to similar lapses in the quality of raw and settled waters when tested for *B. coli* according to the usual method, namely, that of geometric series dilutions. For these reasons, the procedure by which the series "A" data have been derived as in Table 6, consisting of tests of single 1 c. c. and 0.1 c. c. portions in addition to the five 10-c. c. portions, has been followed consistently in all routine tests of the filtered and chlorinated effluents in the experiments described in these papers.

RELATION BETWEEN INDICATED NUMBERS OF B. COLI AND BACTERIAL COUNTS ON AYERS-RUPP MEDIUM, AS OBSERVED IN THE SAME SAMPLES OF RAW AND TREATED WATERS

Owing to the recognized mathematical difficulties involved in enumerating organisms of the *B. coli* group by the usual fermentation test method, bacteriologists have searched for a solid differential culture medium which could be utilized for making direct plate counts of the *B. coli* and closely allied groups. The acid colony count on litmus lactose agar, developed in the early days of water and sewage bacteriology, has been and still is used with this purpose in view, though the chief disadvantage of this and other similar culture media has been their tendency to permit the growth of bacteria other than *B. coli* and having no definite sanitary significance.

A solid differential medium of the kind above mentioned has been developed recently by Ayers and Rupp,[16] who incorporated in it ingredients somewhat similar to those which form the basis of Endo's medium. In view of the encouraging results secured by means of the Ayers-Rupp medium in quantitative studies of *B. coli* in sewage and feces, it was considered desirable, in connection with the studies described in this paper, to observe the results obtained in routine examinations of the raw and treated waters by using this medium in comparison with quantitative tests of the same samples for *B. coli*, following the standard fermentation tube procedure.

The comparison in question was made during the period October 1 to December 4, 1925, in which the bacterial quality of the raw

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[16] Ayers, S. Henry, and Rupp, Phillip. Jour. Bact., vol. III, p. 433 (1918).

water, as delivered to the experimental plant, was varied over a wide range. Observations were made on 48 test days during this period, and parallel tests were made on 540 samples of water for *B. coli* in accordance with the usual fermentation tube procedure and for the count of characteristic red colonies appearing on Ayers-Rupp medium after 40 to 48 hours' incubation of the plate cultures at 37° C. The samples were collected at four different points in the experimental plant, their number being equally divided among these four sources.

The results of the tests were first reduced to daily averages and these averages arranged in the order of magnitude of the *B. coli* content, as indicated by the daily mean index or by the "most probable numbers." These and the corresponding Ayers-Rupp counts were then divided into quartiles and the quartiles averaged, with results as shown in Table 5, in which all of the figures, including the Ayers-Rupp counts, have been expressed in terms of the bacterial numbers per 100 cubic centimeters, in order to make them directly comparable with each other. On referring to Table 7, it will be noted that the "most probable numbers" of *B. coli* approach closely the Ayers-Rupp counts in the upper ranges of magnitude, but diverge from them considerably in the lower ranges. The *B. coli* index is shown to be almost uniformly lower than the Ayers-Rupp count.

TABLE 7.—*Summary of quartile averages derived from daily mean results of parallel tests for B. coli and for plate counts on Ayers-Rupp medium, made in the same samples of water from designated sources*

(Results in terms of numbers per 100 c. c.)

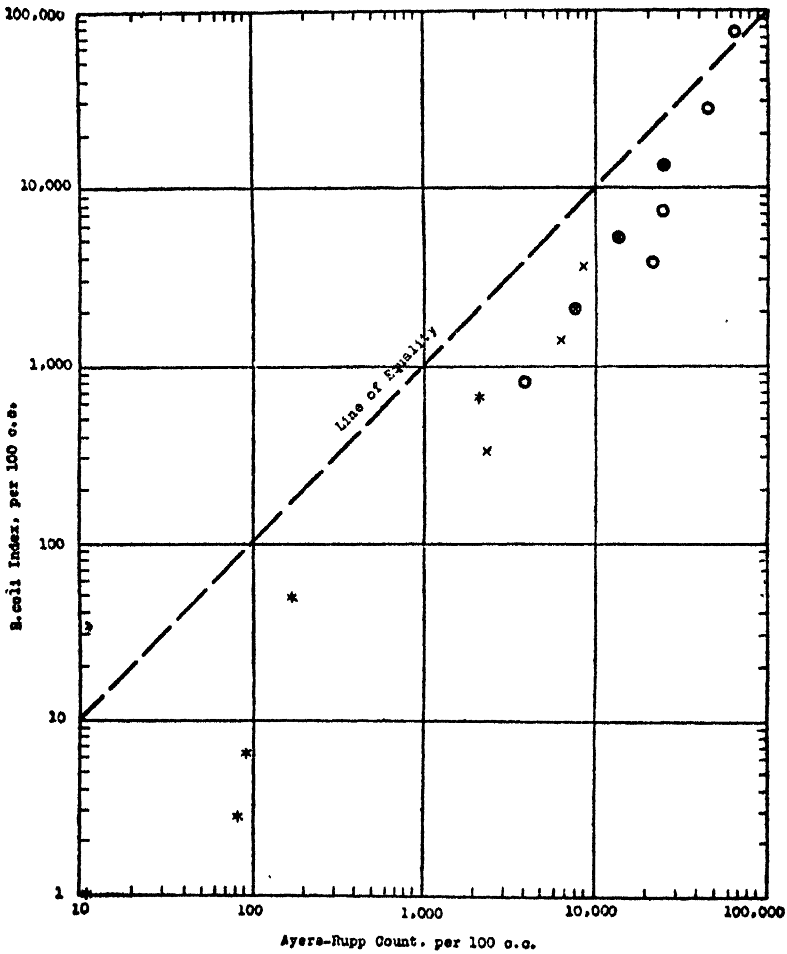
Number of test days	River water, undiluted			River water, diluted			Water applied to filters			Filtered, unchlorinated		
	B. coli		Ayers-Rupp count	*B. coli*		Ayers-Rupp count	*B. coli*		Ayers-Rupp count	*B. coli*		Ayers-Rupp count
	Index [1]	M. P. N. [2]		Index	M. P. N.		Index	M. P. N.		index	M. P. N.	
12	3,880	8,500	21,400	803	1,800	3,900	325	771	2,400	1.0	2.0	11
12	7,560	17,400	29,100	2,030	4,820	7,700	668	1,610	2,100	2.8	3.9	83
12	28,270	58,900	45,900	5,290	12,300	14.200	1,490	3,870	6,200	6.5	12.5	93
12	78,900	189,000	63,600	16,100	38,500	24,600	3,960	9,530	8,400	50.0	131.0	170

[1] Phelps index. [2] Most probable numbers.

The data given in Table 7 are illustrated graphically in Figures 3 and 4, in which the quartile averages of the Ayers-Rupp counts have been plotted, against the corresponding *B. coli* figures expressed, respectively, in terms of the Phelps index and of the "most probable numbers." In each chart the "line of equality" shows the positions of equal values of the two variables.

On referring to these two charts, it will be noted that, with the exception of the points representing the quartile averages obtained

from the tests of the filter effluent, each individual series of plotted results follows a definite trend, approaching closely a line having a slope slightly steeper than that of the "line of equality."[17] Considering the several series of points as a whole, they follow, in both instances, with the single exception noted, a fairly well-defined



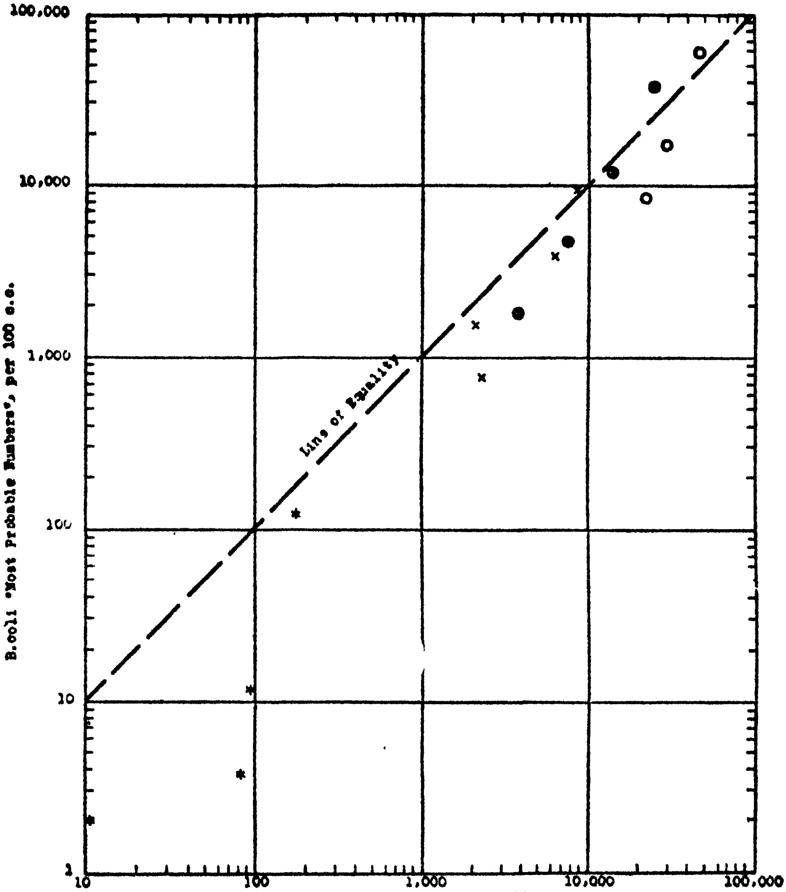
Legend: O = Unmodified raw water; ⊗ = diluted raw water; X = water applied to filters; * = unchlorinated filter effluent

FIG. 3.—Relation between the Ayers-Rupp count and the *B coli* index, as determined in identical samples of water. (Plot of data given in Table 7)

trend, also slightly steeper than the "line of equality." It thus is indicated that in the higher range of bacterial densities, a fairly close correlation exists between the average density as expressed in

[17] The trend of these plots, though approximating a straight line on the logarithmic scales used, would be a curved line on a linear scale, convex toward the lower horizontal axis

terms of the Ayers-Rupp count and as given in terms both of the *B. coli* index and of the "most probable numbers" of this organism. The general trend of the points shows that in the lower ranges of magnitude, the Ayers-Rupp count tends to exceed both the *B. coli* index and the "most probable numbers," but that in the higher ranges the corresponding values of each pair of variables tend to



Legend: ○ = Unmodified river water; ⊗ = water applied to filters; × = diluted river water; ✱ = unchlorinated filter effluent

FIG. 4.—Relation between the Ayers-Rupp count and the "most probable numbers" of *B. coli*, as determined in identical samples of water. (Plot of data given in Table 7)

approach each other more closely. The wide departure of the plotted points in the extreme lower range—i. e., for densities less than 100 per 100 c. c.—both from a well-defined trend among themselves and from the "line of equality," is difficult to explain satisfactorily. It probably is due in part, however, to the fact that the

Ayers-Rupp count in this range, representing an average of less than a single acid colony per plate, is so low that it is subject to a much wider degree of error than in the higher ranges.

CONCLUSIONS

From the foregoing studies of *B. coli* relationships, made in connection with the studies of water purification described in the present series of brief papers, the following conclusions may be stated:

1. That the quantitative expression of the results of routine *B. coli* tests in terms of the "most probable numbers" yields average figures which, though more nearly representative of the true density of *B. coli* in a given water than are those based on the ordinary *B. coli* index, do not alter materially the basic relationship between the raw water and the various effluents in this respect, on which the main conclusions to be derived from the primary series of experiments depend.
2. That the indicated maximum "most probable numbers" of *B. coli* in the raw water consistent with producing a chlorinated filter effluent conforming to the revised U. S. Treasury Department Standard approximates 9,000 per 100 c. c., the corresponding maximum, as expressed in terms of the Phelps index, being 6,000 per 100 c. c. The maximum raw water *B. coli* content consistent with producing an unchlorinated effluent meeting the same standard is indicated as being approximately 100 per 100 c. c., as expressed in terms both of the *B. coli* index and the "most probable numbers."
3. The inclusion of tests of filter effluents, both unchlorinated and chlorinated, in portions of samples less in volume than 10 cubic centimeters, (*a*) gives decidedly higher average indicated densities of *B. coli* in these effluents, and (*b*) yields results which appear to be more consistent with those obtained from geometric-series dilutions than does the exclusion of such tests.
4. For bacterial densities falling within the range of the ordinary plate count, the acid-colony count on the Ayers-Rupp medium gives results which are of the same general order of magnitude numerically as the "most probable numbers" of *B. coli*, as determined by the fermentation-tube test.

Perhaps the most significant of the foregoing conclusions is that which is concerned with the "most probable numbers" of *B. coli*. In spite of the fact that the basic relationships involved in these studies are altered to a very small extent by conversion of the *B. coli* data to these terms, striking experimental evidence is found from the comparison with the Ayers-Rupp counts that the density of *B. coli*,

as given by the "most probable numbers," approaches more nearly the expected order of magnitude than when expressed in terms of the ordinary *B. coli* index. The correspondence between these two quantities throughout a large portion of the entire range of their variation was consistently too close to be regarded as fortuitous.

In routine filtration plant control work the *B. coli* index should yield average results, when converted to terms of bacterial efficiency, which are fairly consistent with those given by the corresponding "most probable numbers" of *B. coli*. In such work, however, as well as in the research field, it is often of primary importance to determine, from a given series of tests, the closest possible approximation to the actual density of *B. coli* in the raw water or effluent. This object can be accomplished with far more precision and with little, if any, greater effort, by converting the result of each individual test to terms of the "most probable numbers" of *B. coli*. The figures thus obtained may be averaged, or treated statistically in any other manner, like the *B. coli* index or the ordinary plate count of bacteria. Although the *B. coli* index doubtless will continue to be used generally in routine plant control work for some time to come, the improved method of enumeration represented by the "most probable numbers" of *B. coli* will gain rapidly in favor with a wider understanding of its greater precision and relative simplicity, when reduced to a tabular system of results as obtained from individual tests.

NOTIFIABLE DISEASES IN LARGE CITIES, 1926

The annual summary of the reports of notifiable diseases in large cities of the United States for the year 1926 will soon be issued as Supplement No. 63 to the Public Health Reports. It is printed in the same form as the summary for the year 1925 (Public Health Reports, vol. 41, No. 38, September 17, 1926), and includes cities having over 100,000 population.

Authoritative estimates of population are not available for some of the cities, but the publication gives case and death rates for most of the cities. The "estimated expectancy," based upon the experience of the preceding seven years, is given for the principal diseases.

The diseases which are included are listed in the following table, which gives some totals taken from the tables of the supplement.

Number of cases of certain communicable diseases reported for 1926 by health officers of cities of over 100,000 population, with estimated expectancy and number of deaths

Disease	Number of cities included	Cases		Deaths, 1926
		Estimated expectancy	1926	
Anthrax	17		52	7
Chicken pox	80	61,323	71,080	29
Dengue	5		8	0
Diphtheria	83	59,492	44,000	3,113
Influenza	79			7,423
Lethargic encephalitis	70			577
Malaria	38			79
Measles	83	79,386	243,358	2,543
Meningococcus meningitis	46	719	714	417
Mumps	76	23,105	23,535	25
Pellagra	33			321
Pneumonia (all forms)	83			46,088
Poliomyelitis	62	679	791	177
Rabies	8			15
Scarlet fever	83	54,998	69,291	755
Septic sore throat	35			174
Smallpox	83	5,465	6,497	217
Tuberculosis (all forms)	81			29,242
Tuberculosis (respiratory system)	72			23,940
Typhoid fever	82	5,966	5,352	916
Typhus fever	9		37	4
Whooping cough	67	44,884	55,832	1,854

The following table gives a comparison of the rates for some of the principal communicable diseases in the large cities of the United States for the years 1922, 1923, 1924, 1925, and 1926:

	Cases		Deaths	
	Number of cities	Cases per 1,000 population	Number of cities	Deaths per 1,000 population
Chicken pox:				
1922	68	1.69	68	0.001
1923	77	2.02	77	.001
1924	82	2.45	82	.001
1925	69	1.89	69	.001
1926	68	2.24	68	.001
Diphtheria:				
1922	73	2.25	73	.16
1923	77	1.97	77	.13
1924	82	1.67	83	.11
1925	69	1.39	69	.10
1926	70	1.33	70	.10
Influenza:				
1922			70	.16
1923			77	.21
1924			80	.10
1925			66	.15
1926			66	.24
Lethargic encephalitis:				
1924			68	.02
1925			58	.02
1926			59	.02
Measles:				
1922	72	5.26	72	.08
1923	77	7.11	77	.08
1924	80	4.36	83	.05
1925	69	3.32	69	.03
1926	70	7.92	70	.08
Mumps:				
1922	66	.72	66	.0005
1923	69	.75	69	.0005
1924	75	1.66	76	.0006
1925	66	.67	66	.0006
1926	63	.76	63	.000[illegible]

	Cases		Deaths	
	Number of cities	Cases per 1,000 population	Number of cities	Deaths per 1,000 population
Pneumonia (all forms):				
1922			74	1.36
1923			75	1.51
1924			83	1.35
1925			68	1.33
1926			69	1.45
Poliomyelitis:				
1924	66	.07	72	.01
1925	63	.05	63	.01
1926	62	.03	62	.01
Scarlet fever:				
1922	73	1.80	73	.03
1923	77	2.07	77	.04
1924	82	2.15	82	.03
1925	68	2.26	68	.03
1926	70	2.13	70	.02
Smallpox.				
1922	75	.17	75	0119
1923	78	.18	78	0014
1924	83	.50	83	.0165
1925	69	.25	69	.0139
1926	70	.16	70	.0009
Tuberculosis (all forms).				
1922			72	1 01
1923			77	.98
1924			82	.96
1925			69	.93
1926			69	.90
Tuberculosis (respiratory system):				
1922			64	.87
1923			67	.85
1924			70	.82
1925			60	.79
1926			61	.78
Typhoid fever:				
1922	73	19	73	.0329
1923	77	.19	77	.0327
1924	81	22	83	.0341
1925	68	.21	69	.0348
1926	69	.16	69	.0277
Whooping cough.				
1923	76	1.67	76	.06
1924	77	1 56	81	.05
1925	65	1 68	68	.06
1926	67	1 92	67	06

COURT DECISIONS RELATING TO PUBLIC HEALTH

Milk ordinance upheld.—(Alabama Supreme Court; Walker *v.* City of Birmingham et al., 112 So. 823; decided March 31, 1927.) The plaintiff brought suit to restrain and enjoin the city of Birmingham and the local health authorities from interfering with his business by refusing to grant him a license to sell milk in the city. The ordinance gave to the board of health power to refuse a permit when, in its judgment, the applicant was not a proper person, and also made provision for a hearing. In upholding this power, the supreme court said:

We think there can be no serious objection to the bill on the ground that the ordinance governing the sale of milk in the city of Birmingham is void as involving the unwarranted delegation of legislative power. The act of August 20, 1915, section 6, armed the city with the full and complete power to adopt ordinances and regulations, not inconsistent with the laws of the State or the State and Federal Constitutions, providing for the safety and preserving the health of its

inhabitants. Acts 1915, page 294, et seq. The administration of such an ordinance may be committed to subordinate officers—necessarily must be—without offense against any principle of constitutional law. * * * Nor is the ordinance objectionable as committing to an officer or officers the power to decide, according to their own notion in each particular case, the question of issuing or withholding a license, and thus deciding according to their unregulated discretion who may, and who may not, engage in a legitimate and useful—even, we may say, necessary—business, for, while it confers upon the board of health the right to refuse a permit "when in its judgment the applicant for such permit is not a proper person to be granted such permit," the further provision is that in every case the applicant shall have the right to be heard in person or by counsel, or both, with the right to introduce competent evidence in support of his application, and the right of the board to revoke licenses is safeguarded in like manner * * *. * * * the ordinance in this case made ample provision for a hearing.

Law authorizing establishment of county tuberculosis hospitals held constitutional and section construed.—(Pennsylvania Supreme Court; Commonwealth ex rel. James et al. *v.* Woodring et al., Commissioners of Northampton County; petition of Montgomery County Medical Society; petition of Diller et al.; 137 A. 635; decided May 9, 1927.) The act of March 23, 1925, authorizing the establishment of county tuberculosis hospitals, was attacked as being unconstitutional on the following grounds:

(1) That, because it required the vote of a majority of the electors of each county in favor of the establishment of a hospital, it was special legislation in violation of a constitutional provision that "the general assembly shall not pass any local or special law: * * * regulating the affairs of counties, cities, townships, wards, boroughs or school districts."

(2) That, because it required the court to appoint an advisory board to aid in the management and operation of each hospital, it violated a constitutional provision that "the general assembly shall not delegate to any special commission * * * any power to make, supervise or interfere with any municipal improvement, * * * or to levy taxes or perform any municipal function whatever."

(3) That the legislature was without power by a subsequent enactment to validate elections in favor of the establishment of county tuberculosis hospitals held under a previous 1921 law which had been declared unconstitutional.

(4) That the members of the advisory board provided for were county officers, and as such were required, pursuant to a constitutional provision, to be elected and not appointed.

The supreme court decided against each of the above contentions and held the act to be constitutional.

Section 12 of the act validated proceedings and elections, held under the 1921 law, for the establishment of county tuberculosis

hospitals, and stated that "such proceedings and hospital may be completed, and the said hospital may thereafter be managed and operated in accordance with the provisions of this act." The court construed the word "may" as being permissive rather than mandatory, saying:

> * * * the legislature evidently intended to say that, where proceedings had been taken under the prior unconstitutional act, the public authorities are given permission to complete such proceedings and erect a hospital, if, in their good judgment, that course ought to be pursued.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Camp Sanitation. Charles R. Cox, division of sanitation, New York State health department. *Public Health News*, New Jersey State department of health, vol. 12, No. 5, April, 1927, pp. 114–117. (Abstract by E. C. Sullivan.)

This article, which is part of a paper read before a meeting of the New Jersey Sanitary Association on December 3, 1926, states that 33 States have enacted special rules and regulations governing the sanitary conditions in summer camps. There is a growing realization that the detailed problems of the supervision of summer camps by public health authorities is a local matter; but as many of the problems of camp sanitation are of a sanitary engineering nature, it is essential that the sanitary engineering divisions of State departments of health should cooperate with the local health authorities for the supervision of such summer camps. In the State of New York, such cooperation is provided through special provisions in the New York State Sanitary Code.

Various phases of camp sanitation are outlined in the paper, such as the importance of a well-drained camp site, the necessity for an adequate supply of pure water, proper provisions for the disposal of liquid wastes and sewage, provisions for proper garbage disposal, and for the providing of a safe milk supply. Mention is made of the necessity for taking suitable precautions to prevent the importation of infectious diseases into camps.

Summer and Tourist Camp Sanitation. (Committee report presented at the Conference of State Sanitary Engineers, June, 1926.) *Engineering and Contracting*, vol. 65, No. 9, September, 1926, pp. 436–438. (Abstract by C. C. Ruchhoft.)

Camp sanitation is demanding greater attention owing to the increasing auto travel. In 35 States there were 3,000 camps having sanitary inspection, and it is estimated that these camps were used by 2,000,000 people in the camping season of 1925. It is therefore important to establish safe water supplies along highways and in tourist camps to limit the spread of water-borne disease. Thirty States have enacted special rules and regulations to govern outdoor camps. In most States special engineers or sanitary inspectors are employed during the summer months to suprevise camp sanitation. A decentralized program of cooperation between the State and local officials seems best for handling the administration of the regulations governing camps. The general specifications for regulations of camp sanitation of several States have a general agreement and include the following points: (1) Definition of a camp; (2) submission of plans and issuance of a permit; (3) safe water supply; (4) safe sewage disposal; (5) sanitary garbage disposal; (6) proper drainage; (7) capable management; (8) penalty clause. Certification of highway and camp water supplies has been found practical and has been taken up by many States.

Garbage Collection and Disposal in Belmont, Mass. Dana M. Wood. *Water Works*, vol. 66, No. 5, May, 1927, pp. 193–195. (Abstract by W. M. Olson.)

This article, by a member of the Belmont Board of Health, begins with a brief general discussion of the problems of garbage collection and disposal. Board of health regulations are referred to with the comment that their customary inadequacy is due to the lack of established standards. Then follow local history and definite data.

"For many years the accepted practice was to place a contract for the collection and disposal of garbage, the contractor to collect with his own equipment and remove all garbage from the town. Invariably the garbage has been used for hog feed on adjoining farms." A table shows the cost of collection and disposal under this arrangement for the years 1898 to 1919, the average cost per capita per year being about 10 cents.

Because of poor service by the contractor in 1921, the town changed to a system of municipal collections in 1922. This method reduced the number of complaints, but by 1924 was found to be costing too much. A table shows how the cost per capita per year rose from \$0.078 in 1920 to \$0.900 in 1924. The town thereupon changed back to the contract method of payment. Instead of being paid on a lump-sum basis, the contractor receives 8½ cents per cubic foot collected and removed from the town. The contractor, in turn, pays his men on a piecework basis by allowing them one day's pay for one load collected. The men may start as early as they wish and are free as soon as one load has been collected and hauled. There must be at least one collection per week from November to May and two per week from June to October. Under this arrangement excellent service has been obtained.

The contractor uses six vehicles, with a total capacity of 729 cubic feet, to serve the 16,400 people. "The most efficient collecting vehicle was found to be one having a capacity of about 8 cord-feet, drawn by a pair of horses, with one collector having the care and feeding of his team." (Frequent use is made of an unusual unit, the cord-foot, equal to 16 cubic feet.) A table shows unit weights of garbage as determined by 16 tests distributed over nearly two years, the average weight being 40 pounds per cubic foot. A fourth table shows by months the amount and cost of garbage collected and removed from May, 1925, to December, 1926. The garbage collected from an estimated population of 16,400, amounted to 504 cubic feet per working-day (303 days), or to 1,203 pounds per day per 1,000 population (365 days).

The total cost of collection and disposal was \$15,282.46, or 8½ cents per cubic foot, or \$0.93 per capita per year. A table shows by months the number of service complaints received during 1925 and 1926. For the last eight months of those years complaints were reduced from 396 in 1925 to 290 in 1926. A final table presents details of costs from 1922 to 1925.

In a discussion of hog feeding of garbage the author notes the following advantages: (1) Food values in garbage are utilized; (2) fluctuations in the amount of garbage can be compensated for by varying the size of the herd, thereby keeping to a minimum the capital invested; and (3) refuse may be buried to form a compost for fertilizing purposes. Disadvantages are: (1) Incomplete consumption; (2) difficulty of delivering garbage in fresh condition; (3) nuisances; (4) injury to herd by cholera or foreign materials in garbage. "One hundred hogs will consume about 1 ton of garbage per day." Hog-feed garbage is worth from 1.6 cents to 2.1 cents per cubic foot.

"The service rendered has greatly improved at decreased costs by returning to the contract basis of collection." The unit cost contract is fair to both contracting parties and has resulted in a notable increase in the amount of garbage collected. (The actual per capita cost in 1926 was higher than the previous

maximum in 1924, but better service and the removal of a greater volume of garbage was obtained.)

Plant Disposes of Noncombustible Rubbish at Los Angeles. Anon. *Engineering News Record*, vol. 98, No. 13, March 31, 1927, pp. 526–28. (Abstract by H. B. Hommon.)

This article, together with the one published in the *Engineering News Record*, August 6, 1925, page 108, on the operation of the Fontana hog farm, gives a very complete and interesting description of how the city of Los Angeles, with a population of around 1,000,000, is disposing of its refuse and garbage.

A city ordinance requires that each householder keep two containers and that one be used only for food waste (garbage) and the other for all other waste. The garbage is collected by the city and dumped into tank cars and hauled to the Fontana hog farm. The refuse, also collected by the city, is sold to the Los Angeles By-Products Co. for $502 per month. The average collection of refuse per working-day over a period of six months was 528 cubic yards. The maximum collection for one day in December was 691 cubic yards.

From a monthly average of 13,500 cubic yards of refuse there were reclaimed: (1) 600 tons of tin cans; (2) 175 tons of miscellaneous metal that had been lightly burned to remove combustible material; (3) 15,000 salable bottles; (4) 85 tons of salable broken glass; (5) 1½ tons of rags; and (6) 8½ tons of scrap metal, tires, and rubber. There were counted 167 different combustible items in one day.

Seven men stationed along the conveyor belt from the dump pick out and segregate the different kinds of material in the refuse. All the metal, except the tin cans from which tin is recovered, and granite-iron, which can not be salvaged, is loaded into metal cars, burned, and baled. The bales, 20 by 24 inches, are made by a 600-pound weight dropping 7 feet on the metal in a chamber at a rate of 25 blows per minute.

The tin cans are removed at the ends of the two conveyor belts by magnetic pulleys that hold the tin cans to them until they get around and beyond the point where other material is thrown off. The tin cans, separated from all other material, are lightly burned to remove labels, etc., and then delivered to the de-tinning plant, where the tin is removed by a chemical process. Paper labels on cans interfere with efficiency of operation, and the labels are very difficult to remove. Investigation of this problem is under way. About 20 pounds of tin are recovered per ton of cans.

The de-tinned cans are baled in hydraulic presses. When baled to a density of 11 per cent of the density of pig iron, they are sold to copper mills for use as precipitate, and when pressed to 50 per cent they are sold to steel mills for remelting. In addition to the 600 tons of cans delivered by the city, monthly, the company purchases 400 tons of cans and scrap-tinned metal each month from near-by cities in order to keep the plant busy.

Pure, clear glass that can not be salvaged whole at the plant is broken and a part ground so that the bulk does not exceed 40 cubic feet per ton, and is then shipped to China.

Garbage Incineration for Small Cities. H. V. Pedersen. *American City*, vol. 36, No. 5, May, 1927, pp. 629–630. (Abstract by D. W. Evans.)

The majority of cities in Iowa of 15,000 inhabitants make some pretense of collecting and disposing of garbage. The manner of collection is practically the same in all cases, but the method of paying for the services usually differs.

Four outstanding methods of disposing of garbage have been worked out with various degrees of success: (1) The "sanitary fill," or disposal by burial, has found favor in many cities where sites for this method are available. Strict supervision is needed when this method is used to prevent formation of nuis-

ances; (2) incineration or destruction of garbage entirely by fire; (3) reduction or conversion into by-products; (4) feeding to hogs.

Most cities of less than 15,000 people have sanitary regulations covering disposal of garbage, but they are seldom carried out. The objection to municipally owned system of collection and disposal of garbage has been the cost. The proper disposal of garbage has been given less consideration than any other civic problem.

The article is concluded by a brief description of a portable incinerator, newly developed particularly for small towns. This incinerator employs two movable conveyors for drying the garbage and one movable grate for destruction to ash. The ash is dumped into cans at the rear of the truck. The fuel used is oil supplied through burners, and the speed of the conveyors can be regulated. Demonstrations have shown that 5 tons per day of 8 hours can be burned to ash without nuisances resulting.

International Health Year Book, 1925, Report of the League of Nations Health Organization. 638 pages. Housing. (Abstract by A. L. Dopmeyer.)

Czechoslovakia.—A law was passed on March 25, 1925, for the protection of tenants, marking a gradual return of the right to the free disposal of accommodations in pre-war premises, and allowing a gradual increase in rents of from 50 to 100 per cent over pre-war prices. The effects of the law expire on March 31, 1928.

Germany.—There was an increase in building operations in 1925 over 1924. In the 86 communities of 50,000 population or more there was an increase of 62 per cent in total buildings and 78 per cent in dwelling houses. The proportion of dwelling houses to the total number of buildings rose from 53 per cent to 61 per cent. The number of sets of apartments showed an increase of 86 per cent.

Hungary.—During 1925, the Government concentrated its efforts on the city of Budapest. Four tenement houses and 240 apartments were begun in 1924. At the end of 1925, six buildings, with a total capacity of 150 flats, were begun. The ministry of social welfare makes loans up to 60 per cent of the value of the buildings to encourage building.

Netherlands.—It is stated that, on the whole, the housing crisis is at an end in the Netherlands. In Amsterdam alone, 3,079 dwelling houses were vacant on December 31, 1925. The cyclone of August 10, 1925, showed the advantage of strict enforcement of sound building regulations, as the houses built in recent years were the least affected.

Union of Socialist Soviet Republics.—There are special committees in all of the Governments of the Union for this purpose. There is a central committee with headquarters at Moscow for promoting the construction of workmen's dwellings. The housing conditions in the Union are still extremely unsatisfactory, but there is some recent improvement.

United States of North America.—During the year, 86 additional cities adopted zoning ordinances, bringing the total up to 422.

Swimming Pools in 1926. Anon. *Weekly Health Review,* Detroit department of health, series 8, No. 6, February 5, 1927. 3 pages. (Abstract by I. W. Mendelsohn.)

Data are given regarding the sanitary ratings of the 37 swimming pools in Detroit in 1926. Eight new pools were installed in the year. Seven of the pools did not comply with the department's standards in 1926.

The bacterial standards adopted by the department for swimming pool water are: (1) A median monthly total bacterial count of not over 2,000 per c.c.; (2) not over 50 per cent of the samples during any given month shall show the presence of colon bacilli; (3) not over 20 per cent of the samples during any given month shall show a colon count of over 10 per c. c.

Swimming Pool and Bath House, London. E. V. Buchanan, general manager, Public Utilities Commission, London, Ontario. *Canadian Engineer*, vol. 51, No. 17, October 26, 1926, pp. 575–578. (Abstract by R. E. Thompson.)

This is an illustrated description of the 80 by 188 feet open-air swimming pool completed by the playgrounds department, London, Ontario, in August, last. The pool was commenced five years ago. It was constructed in three sections, owing to the limited appropriation for playgrounds purposes. Equipment provided includes a modern bathhouse, with lavatories, shower baths, filter plant, scum gutter, concrete runways, bleachers with seating capacity of 800 people, and electric flood lighting for night bathing. On the way from the dressing room to the pool there are lavatories and shower baths, and all bathers must wade through a sump before entering the pool. The recirculated water, after addition of alum, is passed through mechanical filters and is chlorinated before being returned to the pool. In addition, bleaching powder is mixed directly into the pool water every morning, about 5 pounds being used for approximately 400,000 gallons of water in the pool. The total cost of the plant was approximately $30,000. Children up to 16 years of age are admitted free, but a rental of 10 cents for bathing suits is charged for all bathers. Adults are admitted for 25 cents or with a season's ticket costing $5.

1926 Annual Swimming Pool Report. Department of public health and welfare, Cleveland, Ohio. 2 pages. (Abstract by I. W. Mendelsohn.)

The sanitary ratings for 1926 of the 26 swimming pools of Cleveland are given. Nine of the pools are new. The method of scoring provides for three points for each water sample collected; a deduction of one point for insufficient chlorinations where the bacterial count is over 1,000 without confirming colon group; deduction of two points for improper operation where colon organisms are confirmed; and a deduction of three points for extreme negligence where colon organisms are confirmed and the bacterial count is over 1,000. The averages are calculated by dividing the total score obtained by the total possible score.

Some of California's Municipal Swimming Pools. George W. Braden, western representative of the Playground and Recreation Association of America. *American City*, vol. 36, No. 5, May, 1927, pp. 591–594. (Abstract by D. W. Evans.)

Great strides have been made in municipal development of swimming pools in both large and small cities in California during the past three years. The author attributes this to the mild climate prevailing most of the year and the smaller proportion of natural waterways than exist elsewhere.

A brief statement is made of the type of pool and of their construction, operation, and equipment in the cities of Pasadena, Glendale, Richmond, Los Angeles, Stockton, and San Francisco.

DEATHS DURING WEEK ENDED JULY 2, 1927

Summary of information received by telegraph from industrial insurance companies for week ended July 2, 1927, and corresponding week of 1926. (From the Weekly Health Index, July 7, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended July 2, 1927	Corresponding week 1926
Policies in force	68, 033, 479	64, 897, 122
Number of death claims	11, 306	10, 930
Death claims per 1,000 policies in force, annual rate	8. 7	8. 8

Deaths from all causes in certain large cities of the United States during the week ended July 2, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, July 7, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended July 2, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended July 2, 1927 [2]
	Total deaths	Death rate [1]		Week ended July 2, 1927	Corresponding week 1926	
Total (68 cities)	6,631	11.7	[3] 11.7	663	[3] 690	[4] 55
Akron	50			11	6	119
Albany [5]	32	13.9	15.3	1	5	21
Atlanta	66			8	13	
White	30			2	3	
Colored	36	(6)		6	10	
Baltimore [5]	202	12.9	12.8	18	20	56
White	140		10.7	13	12	50
Colored	62	(6)	25.0	5	8	78
Birmingham	55	13.3	13.3	8	9	
White	25		9.4	3	3	
Colored	30	(6)	19.5	5	6	
Boston	178	11.7	12.3	23	26	64
Bridgeport	27			1	4	19
Buffalo	118	11.2	12.9	15	12	63
Cambridge	19	8.0	10.3	2	6	36
Camden	28	11.0	11.9	2	2	34
Canton	18	8.3	8.5	3	4	71
Chicago [5]	655	11.0	10.6	66	68	57
Cincinnati	142	18.0	15.2	13	12	81
Cleveland	170	9.0	9.0	14	20	37
Columbus	86	15.4	13.2	5	8	47
Dallas	52	13.0	11.3	8	4	
White	34		11.0	5	4	
Colored	18	(6)	13.5	3	0	
Dayton	39	11.3	11.8	2	3	33
Denver	70	12.6	13.0	3	7	
Des Moines	29	10.1	10.0	2	2	33
Detroit	305	11.9	11.6	43	43	68
Duluth	22	10.0	4.6	1	0	22
El Paso	33	15.1	13.4	8	9	
Erie	18			1	0	20
Fall River [5]	21	8.2	13.1	2	5	35
Flint	21	7.7	8.1	4	3	65
Fort Worth	44	14.0	10.2	4	7	
White	35		10.4	3	6	
Colored	9	(6)	8.2	1	1	
Grand Rapids	32	10.5	11.7	4	3	59
Houston	64			7	5	
White	44			6	3	
Colored	20			1	2	
Indianapolis	110	15.3	11.2	4	6	31
White	91		10.8	3	6	27
Colored	19	(6)	14.2	1	0	61
Jersey City	51	8.3	10.0	7	4	52
Kansas City, Kans	28	12.5	15.6	4	5	78
White	22		13.0	4	4	89
Colored	6	(6)	28.0	0	1	0
Kansas City, Mo	86	11.7	10.6	7	7	
Knoxville	36	18.4		6		
White	31			5		
Colored	5	(6)		1		
Los Angeles	238			34	16	97
Louisville	81	13.2	16.4	0	12	0
White	67		13.6	0	9	0
Colored	14	(6)	32.2	0	3	0
Lowell	18	8.5	14.7	4	3	77
Lynn	19	9.4	8.5	0	0	0
Memphis	63	18.4	19.1	8	4	
White	25		15.6	5	1	
Colored	38	(6)	25.7	3	3	
Milwaukee	124	12.2	9.2	20	7	93
Minneapolis	97	11.4	10.9	4	5	23
Nashville [5]	57	21.5	18.6	3	5	
White	42		13.3	3	3	
Colored	15	(6)	32.1	0	2	
New Bedford	26	11.3	12.6	1	10	17
New Haven	37	10.4	12.0	1	1	14

(See footnotes at end of table)

Deaths from all causes in certain large cities of the United States during the week ended July 2, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, July 7, 1927, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended July 2, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended July 2, 1927 [2]
	Total deaths	Death rate [1]		Week ended July 2, 1927	Corresponding week 1926	
New Orleans	154	18.9	16.9	15	12	
White	89		12.4	8	2	
Colored	65	(6)	29.7	7	10	
New York	1,172	10.2	10.7	118	127	49
Bronx Borough	145	8.2	9.0	15	12	48
Brooklyn Borough	395	9.1	9.7	41	52	42
Manhattan Borough	462	13.3	13.7	48	49	56
Queens Borough	124	8.0	7.8	11	11	47
Richmond Borough	46	16.3	12.4	3	3	56
Newark, N. J	74	8.3	10.8	6	8	30
Oakland	58	11.3	9.6	5	3	59
Oklahoma City	28			4	2	
Omaha	48	11.4	13.8	7	4	78
Paterson	30	10.9	9.1	2	2	35
Philadelphia	424	10.9	11.5	32	43	43
Pittsburgh	157	12.7	13.4	23	23	80
Portland, Oreg	60			5	3	53
Providence	48	8.9	12.3	5	8	42
Richmond	53	14.4	14.1	4	8	53
White	27		10.9	2	2	40
Colored	26	(6)	21.8	2	6	76
Rochester	79	12.7	9.6	7	2	59
St. Louis	238	14.8	14.7	20	23	
St. Paul	61	12.7	10.7	7	6	64
Salt Lake City [5]	42	16.1	10.6	7	2	106
San Antonio	61	15.1	14.7	13	15	
San Diego	40	18.1	12.3	5	1	106
San Francisco	161	14.6	14.4	12	5	75
Schenectady	38	21.3	9.0	5	1	149
Somerville	20	10.2	7.3	2	1	72
Spokane	14	6.7	15.3	2	3	59
Springfield, Mass	27	9.6	14.7	1	5	15
Syracuse	40	10.6	12.1	6	7	77
Tacoma	25	12.2	9.3	2	2	47
Toledo	96	16.5	12.0	8	9	77
Trenton	22	8.4	14.8	3	3	52
Utica	25	12.7	12.1	2	0	46
Washington, D. C	100	9.7	13.0	11	15	64
White	52		11.0	5	5	42
Colored	48	(6)	19.1	6	10	110
Waterbury	26			5	1	118
Wilmington, Del	33	13.7	10.1	3	1	74
Worcester	41	11.0	10.0	3	5	36
Yonkers	13	5.7	7.2	3	1	68
Youngstown	33	10.2	10.1	4	7	56

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 67 cities.
[4] Data for 62 cities.
[5] Deaths for week ended Friday, July 1, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended July 9, 1927

DIPHTHERIA

	Cases
Alabama	12
Arizona	3
California	64
Colorado	26
Connecticut	13
Delaware	1
Florida	5
Georgia	3
Illinois	99
Indiana	26
Kansas	12
Louisiana	5
Maine	3
Maryland [1]	44
Massachusetts	58
Michigan	66
Minnesota	14
Mississippi	4
Missouri	16
Montana	1
Nebraska	4
New Jersey	64
New Mexico	2
New York [2]	73
North Carolina	11
Oklahoma [3]	7
Oregon	9
Pennsylvania	162
South Carolina	9
Tennessee	8
Texas	14
Utah [1]	6
Vermont	4
Washington	10
West Virginia	12
Wisconsin	21

INFLUENZA

	Cases
Alabama	4
Arkansas	4
California	9
Connecticut	2
Florida	1
Georgia	20
Illinois	3
Maryland [1]	2
Massachusetts	2
Michigan	2
Minnesota	1
New Jersey	1
Oklahoma [3]	7
Oregon	15
South Carolina	138
South Dakota	2
Tennessee	20
Texas	21
Utah [1]	3
West Virginia	2
Wisconsin	14

MEASLES

	Cases
Alabama	60
Arizona	66
Arkansas	42
California	198
Colorado	52
Connecticut	30
Delaware	4
Florida	19
Georgia	32
Idaho	5
Illinois	177
Indiana	50
Kansas	89

[1] Week ended Friday.
[2] Exclusive of New York City.
[3] Exclusive of Oklahoma City and Tulsa.

MEASLES—continued

	Cases
Louisiana	43
Maine	13
Maryland [1]	14
Massachusetts	235
Michigan	120
Minnesota	18
Missouri	36
Montana	7
Nebraska	14
New Jersey	27
New Mexico	17
New York [2]	498
North Carolina	397
Oklahoma [3]	77
Oregon	59
Pennsylvania	418
South Carolina	144
South Dakota	26
Tennessee	5
Texas	34
Utah [1]	3
Vermont	41
Washington	233
West Virginia	68
Wisconsin	446
Wyoming	18

MENINGOCOCCUS MENINGITIS

California	8
Connecticut	1
Illinois	5
Kansas	1
Michigan	1
Minnesota	2
New Jersey	3
New York [2]	4
Pennsylvania	2
Utah [1]	1
Washington	1
West Virginia	2
Wisconsin	7

POLIOMYELITIS

Arizona	5
California	27
Florida	1
Georgia	2
Illinois	4
Indiana	1
Kansas	4
Louisiana	6
Massachusetts	4
Mississippi	1
New Jersey	2
New Mexico	10
New York [2]	2
Oklahoma [3]	1
Pennsylvania	1
South Carolina	2
Tennessee	3
Texas	3
Utah [1]	1

SCARLET FEVER

	Cases
Alabama	8
Arizona	1
California	53
Colorado	71
Connecticut	40
Delaware	2
Florida	5
Georgia	7
Idaho	2
Illinois	97
Indiana	33
Kansas	26
Louisiana	2
Maine	10
Maryland [1]	26
Massachusetts	190
Michigan	133
Minnesota	68
Mississippi	4
Missouri	27
Montana	20
Nebraska	19
New Jersey	104
New Mexico	11
New York [2]	115
North Carolina	14
Oklahoma [3]	10
Oregon	3
Pennsylvania	226
South Carolina	5
South Dakota	24
Tennessee	9
Texas	4
Utah [1]	11
Vermont	1
Washington	21
West Virginia	26
Wisconsin	69
Wyoming	11

SMALLPOX

Alabama	24
California	9
Colorado	15
Florida	14
Georgia	7
Idaho	6
Illinois	26
Indiana	91
Kansas	21
Louisiana	2
Michigan	22
Minnesota	1
Mississippi	6
Missouri	19
Montana	9
Nebraska	13
New York [2]	8
North Carolina	15
Oklahoma [3]	29
Oregon	15
South Carolina	19

[1] Week ended Friday.

[2] Exclusive of New York City.

[3] Exclusive of Oklahoma City and Tulsa.

SMALLPOX—continued

	Cases
South Dakota	6
Tennessee	5
Texas	8
Utah [1]	6
Virginia	6
Washington	43
West Virginia	59
Wisconsin	1
Wyoming	10

TYPHOID FEVER

	Cases
Alabama	84
Arizona	2
Arkansas	18
California	12
Colorado	4
Connecticut	1
Florida	12
Georgia	89
Illinois	22
Indiana	12
Kansas	8
Louisiana	33

TYPHOID FEVER—continued

	Cases
Maine	2
Maryland [1]	4
Massachusetts	4
Michigan	9
Minnesota	5
Mississippi	33
Missouri	8
Nebraska	2
New Jersey	6
New Mexico	3
New York [2]	17
North Carolina	70
Oklahoma [3]	70
Oregon	9
Pennsylvania	18
South Carolina	127
South Dakota	2
Tennessee	165
Texas	15
Utah [1]	2
Washington	1
West Virginia	18
Wisconsin	2

Reports for Week Ended July 2, 1927

DIPHTHERIA

	Cases
District of Columbia	11
North Dakota	4

MEASLES

	Cases
District of Columbia	2
North Dakota	19

SCARLET FEVER

	Cases
District of Columbia	16
North Dakota	20

SMALLPOX

	Cases
District of Columbia	6
North Dakota	7

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week.

State	Cerebrospinal meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
May, 1927										
District of Columbia	0	79	5		34	0	0	81	9	3
Hawaii Territory	7	21	7		140		0	10	0	12
Montana	11	11	26		71		0	102	23	10
June, 1927										
Arizona	1	16	2		162		12	30	0	17
Connecticut	4	138	9	5	252		1	277	0	5
Nebraska		37			317		1	74	38	5

May, 1927

	Cases
Chicken pox:	
District of Columbia	134
Hawaii Territory	29
Montana	66
Conjunctivitis:	
Hawaii Territory	18
Montana	2

May, 1927—Continued

	Cases
Dysentery:	
Hawaii Territory	2
German measles:	
Montana	2
Leprosy:	
Hawaii Territory	3

[1] Week ended Friday. [2] Exclusive of New York City. [3] Exclusive of Oklahoma City and Tulsa.

May, 1927—Continued

	Cases
Lethargic encephalitis:	
Montana	1
Mumps:	
Montana	5
Paratyphoid fever:	
Hawaii Territory	1
Plague.	
Hawaii Territory	2
Rocky Mountain spotted or tick fever:	
Montana	12
Tetanus	
Hawaii Territory	6
Trachoma:	
Hawaii Territory	2
Montana	5
Whooping cough.	
District of Columbia	48
Hawaii Territory	23
Montana	26

June, 1927

	Cases
Chicken pox.	
Arizona	5
Connecticut	469
Nebraska	49
German measles:	
Connecticut	25
Nebraska	92
Leprosy	
Connecticut	1

June, 1927—Continued

	Cases
Lethargic encephalitis:	
Arizona	1
Connecticut	4
Malta fever:	
Arizona	1
Mumps	
Arizona	32
Connecticut	167
Nebraska	66
Opthalmia neonatorum:	
Connecticut	2
Paratyphoid fever:	
Connecticut	1
Nebraska	1
Septic sore throat:	
Connecticut	17
Tetanus:	
Nebraska	2
Trachoma	
Arizona	2
Connecticut	1
Typhus fever:	
Connecticut	1
Whooping cough:	
Arizona	9
Connecticut	98
Nebraska	35

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 100 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,950,000. The estimated population of the 94 cities reporting deaths is more than 30,280,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended June 25, 1927, and June 26, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
41 States	1,480	1,218	
100 cities	959	760	718
Measles			
40 States	6,274	11,787	
100 cities	1,793	3,613	
Poliomyelitis.			
40 States	65	22	
Scarlet fever:			
41 States	2,549	2,442	
100 cities	1,126	1,236	601
Smallpox:			
41 States	484	335	
100 cities	95	93	84
Typhoid fever:			
41 States	579	485	
100 cities	65	68	103
Deaths reported			
Influenza and pneumonia:			
94 cities	471	448	
Smallpox:			
94 cities	0	0	

City reports for week ended June 25, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during non-epidemic years

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	0	1	0	1	0	1	1	2
New Hampshire:									
Concord	22,546	0	0	0	0	0	1	0	1
Manchester	83,097	0	1	0	0	0	4	0	0
Vermont:									
Barre	10,008	0	0	1	0	0	0	0	1
Burlington	24,089	0	1	0	0	0	11	1	0
Massachusetts:									
Boston	779,620	57	45	22	1	0	110	26	17
Fall River	128,993	10	3	2	0	0	10	1	1
Springfield	142,065	19	2	7	1	1	3	1	1
Worcester	190,757	13	3	2	0	0	1	1	4
Rhode Island:									
Pawtucket	69,760	13	0	0	0	0	0	0	0
Providence	267,918	0	6	8	0	0	1	0	3
Connecticut:									
Bridgeport	(1)	3	4	7	0	0	0	2	2
Hartford	160,197	1	4	1	0	0	3	2	1
New Haven	178,927	9	1	0	0	1	11	2	4
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	13	9	19		1	14	6	0
New York	5,873,356	228	202	415	9	7	66	132	100
Rochester	316,786	9	8	9		0	3	2	3
Syracuse	182,003	11	4	0		0	220	3	5
New Jersey:									
Camden	128,642	6	4	7	0	0	0	0	4
Newark	452,513	95	11	9	2	0	11	90	3
Trenton	132,020	0	3	3	0	1	0	0	3
Pennsylvania:									
Philadelphia	1,979,364	97	56	56		3		116	41
Pittsburgh	631,563	38	13	28		1	110	4	14
Reading	112,707	3	2	1		0	77	12	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	7	6	10	0	0	4	5	[illegible]
Cleveland	936,485	47	18	41	1	2	3	72	17
Columbus	279,836	5	2	4	0	0	3	0	1
Toledo	287,380	43	5	4	0	0	22	2	4
Indiana:									
Fort Wayne	97,846	2	2	1	0	0	1	0	2
Indianapolis	358,819	10	3	8	0	0	2	26	9
South Bend	80,091	0	1	1	0	0	6	0	1
Terre Haute	71,071	1	0	2	0	0	4	0	0
Illinois:									
Chicago	2,995,239	99	70	69	2	2	66	122	40
Springfield	63,923	6	0	0	1	1	0	1	1

[1] No estimate made.

City reports for week ended June 25, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL—continued									
Michigan:									
Detroit	1,245,824	24	40	44	2	1	9	62	21
Flint	130,316	1	2	1	0	1	15	0	0
Grand Rapids	153,698	3	2	0	0	0	26	0	1
Wisconsin									
Kenosha	50,891	7	1	0	0	0	0	17	0
Madison	46,385	6	0	0	0	0	0	0	0
Milwaukee	509,192	52	11	16	0	0	176	54	8
Racine	67,707	12	1	1	0	0	4	6	0
Superior	39,671	0	1	0	0	0	1	0	1
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	6	1	1	0	0	7	0	0
Minneapolis	425,435	98	11	3	0	1	7	0	6
St. Paul	246,001	17	11	1	0	1	19	0	7
Iowa									
Sioux City	76,411	3	1	0	0	-------	10	0	-------
Waterloo	36,771	0	0	0	0	-------	0	0	-------
Missouri									
Kansas City	367,481	8	3	4	0	3	9	4	3
St. Joseph	78,342	0	1	0	0	0	5	0	1
St. Louis	821,543	12	28	12	0	0	17	52	-------
North Dakota									
Fargo	26,403	0	0	0	0	0	3	1	0
Grand Forks	14,811	0	0	0	0	-------	0	0	-------
South Dakota									
Aberdeen	15,036	1	0	0	0	-------	0	0	-------
Sioux Falls	30,127	3	1	0	0	-------	30	0	-------
Nebraska									
Lincoln	60,941	1	1	4	0	0	17	4	1
Omaha	211,768	1	2	0	0	0	2	3	2
Kansas									
Topeka	55,411	6	1	1	0	0	22	1	1
Wichita	88,367	4	0	1	0	0	8	0	5
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	2	1	1	0	0	0	0	0
Maryland.									
Baltimore	796,296	42	13	41	0	0	3	6	7
Cumberland	33,741	0	0	0	0	0	3	0	0
Frederick	12,035	0	0	1	0	0	0	0	0
District of Columbia.									
Washington	497,906	11	7	6	0	0	8	0	6
Virginia									
Lynchburg	30,395	4	0	0	0	0	16	0	0
Norfolk	(1)	1	0	0	0	0	7	0	2
Richmond	186,403	2	1	5	0	0	29	1	4
Roanoke	58,208	1	1	0	0	0	0	0	1
West Virginia:									
Charleston	49,019	0	1	1	0	0	8	0	0
Wheeling	56,208	2	0	0	0	0	2	0	1
North Carolina.									
Raleigh	30,371	1	0	1	0	0	45	0	1
Wilmington	37,061	0	0	0	0	0	28	1	0
Winston-Salem	69,031	1	1	0	0	0	82	8	0
South Carolina.									
Charleston	73,125	1	0	0	2	0	1	0	1
Columbia	41,225	0	0	0	0	-------	29	1	2
Greenville	27,311	0	0	1	0	0	0	0	0
Georgia·									
Atlanta	(1)	0	0	1	5	1	6	0	2
Brunswick	16,809	0	0	0	0	0	0	12	0
Savannah	93,134	0	0	0	1	0	11	0	0
Florida:									
Miami	69,754	0	1	2	0	0	0	0	1
St. Petersburg	26,847	-------	0	-------	-------	0	-------	-------	0
Tampa	94,743	0	1	1	0	0	15	0	0

[1] No estimate made.

City reports for week ended June 25, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria: Cases, estimated expectancy	Diphtheria: Cases reported	Influenza: Cases reported	Influenza: Deaths reported	Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	1	1	0	0	0	0	2
Louisville	305,935	0	2	0	2	0	0	7	2
Tennessee:									
Memphis	174,533	1	1	0	0	0	5	0	3
Nashville	136,220	2	0	1	0	2	0	0	2
Alabama:									
Birmingham	205,670	2	1	5	1	2	16	1	2
Mobile	65,955	0	0	0	0	1	0	0	0
Montgomery	46,481	0	0	0	0	0	5	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	0	0	1	0	....	0	0	....
Little Rock	74,216	0	0	0	0	0	18	0	0
Louisiana:									
New Orleans	414,493	0	4	6	3	0	1	0	6
Shreveport	57,857	0	0	0	0	0	0	1	0
Oklahoma:									
Oklahoma City	(1)	0	0	0	3	1	21	0	6
Tulsa	124,478	2	....	1	0	....	1	3	....
Texas:									
Dallas	194,450	0	2	3	0	0	8	0	1
Galveston	48,375	0	0	0	0	0	0	0	0
Houston	164,954	0	2	3	0	0	1	0	2
San Antonio	198,069	0	1	3	0	1	3	1	1
MOUNTAIN									
Montana:									
Billings	17,971	0	0	0	0	0	0	0	1
Great Falls	29,883	1	0	0	0	0	3	0	0
Helena	12,037	0	0	0	0	0	0	0	0
Missoula	12,668	0	0	0	0	0	1	0	1
Idaho:									
Boise	23,042	2	0	0	0	0	0	2	0
Colorado:									
Denver	280,911	8	10	9	....	3	28	0	1
Pueblo	43,787	1	1	2	0	0	15	0	2
New Mexico:									
Albuquerque	21,000	1	0	0	0	0	5	5	0
Utah:									
Salt Lake City	130,948	41	3	6	0	0	1	2	1
Nevada:									
Reno	12,665	0	0	0	0	0	2	0	0
PACIFIC									
Washington:									
Seattle	(1)	16	4	1	0	....	225	5	....
Spokane	108,897	13	2	0	0	....	8	0	....
Tacoma	104,455	9	2	0	0	0	16	0	1
Oregon:									
Portland	282,383	6	6	2	0	0	38	2	4
California:									
Los Angeles	(1)	33	36	31	7	3	46	11	29
Sacramento	72,260	3	3	1	0	0	2	0	5
San Francisco	557,530	22	17	10	0	0	80	28	3

[1] No estimate made.

City reports for week ended June 25, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
NEW ENGLAND											
Maine:											
Portland	1	1	0	0	0	0	1	0	0	5	19
New Hampshire:											
Concord	0	1	0	0	0	0	0	0	0	0	8
Manchester	1	2	0	0	0	1	0	0	0	0	9
Vermont:											
Barre	0	0	0	0	0	0	0	0	0	0	3
Burlington	0	1	0	0	0	0	0	0	0	0	5
Massachusetts:											
Boston	34	71	0	0	0	12	2	0	0	19	173
Fall River	1	3	0	0	0	1	1	1	0	0	25
Springfield	3	0	0	0	0	0	0	0	0	6	31
Worcester	5	7	0	0	0	3	0	0	0	6	46
Rhode Island:											
Pawtucket	1	0	0	0	0	1	0	0	0	0	11
Providence	4	8	0	0	0	4	0	0	0	6	56
Connecticut:											
Bridgeport	5	5	0	0	0	1	1	0	0	0	22
Hartford	2	4	0	0	0	3	1	0	0	5	29
New Haven	2	2	0	0	0	3	1	0	0	0	38
MIDDLE ATLANTIC											
New York:											
Buffalo	14	19	0	0	0	12	1	0	0	17	127
New York	106	271	0	0	0	[1] 88	14	3	1	121	1,253
Rochester	8	11	0	0	0	3	0	0	0	2	64
Syracuse	5	3	0	0	0	0	0	0	--------	1	46
New Jersey:											
Camden	2	4	0	0	0	2	1	0	0	0	31
Newark	13	28	0	0	0	9	0	2	0	34	85
Trenton	2	1	1	0	0	4	1	0	0	0	47
Pennsylvania:											
Philadelphia	50	92	0	0	0	38	5	3	2	27	404
Pittsburgh	19	19	0	0	0	7	0	0	0	17	152
Reading	1	3	0	0	0	1	1	0	0	4	15
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	6	29	2	1	0	11	2	0	0	2	111
Cleveland	18	20	1	0	0	14	2	3	1	28	177
Columbus	4	6	1	1	0	3	1	0	0	8	78
Toledo	8	17	1	0	0	6	0	0	0	15	66
Indiana:											
Fort Wayne	1	0	1	0	0	0	0	0	0	2	25
Indianapolis	5	7	6	9	0	5	0	0	0	13	101
South Bend	1	0	0	1	0	1	0	0	0	1	18
Terre Haute	1	0	1	0	0	1	0	0	0	0	14
Illinois:											
Chicago	63	94	2	1	0	34	3	3	0	101	671
Springfield	3	1	0	0	0	0	0	0	0	0	26
Michigan:											
Detroit	45	85	3	1	0	21	3	0	0	102	251
Flint	3	23	1	3	0	0	0	0	0	4	17
Grand Rapids	4	10	0	1	0	2	0	1	0	8	28
Wisconsin:											
Kenosha	0	6	1	0	0	0	0	2	1	1	11
Madison	0	5	0	0	0	0	0	0	0	8	6
Milwaukee	15	26	1	0	0	12	1	0	0	29	110
Racine	2	1	0	0	0	1	0	0	0	2	10
Superior	2	5	2	0	0	2	0	0	0	0	18
WEST NORTH CENTRAL											
Minnesota:											
Duluth	4	6	3	0	0	1	0	1	0	0	26
Minneapolis	18	35	6	0	0	3	1	0	0	5	90
St. Paul	13	13	2	1	0	7	1	0	0	1	61

[1] Pulmonary tuberculosis only.

City reports for week ended June 25, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
WEST NORTH CENTRAL—continued											
Iowa:											
Sioux City	1	1	2	3			0	0		5	
Waterloo	0	0	1	0			0	0		0	
Missouri:											
Kansas City	3	3	1	2	0	5	1	0	0	27	93
St. Joseph	0	3	0	13	0	2	0	0	0	3	32
St. Louis	14	10	2	7	0	3	3	2	0	52	180
North Dakota:											
Fargo	1	1	0	0	0	0	0	0	0	0	4
Grand Forks	0	1	0	0			0	0		0	
South Dakota:											
Aberdeen	1	0	0	0			0	0		2	
Sioux Falls	0	0	0	0			0	0		0	
Nebraska:											
Lincoln	1	0	0	0	0	0	0	1	0	3	18
Omaha	2	4	4	1	0	7	1	0	0	1	42
Kansas:											
Topeka	0	3	1	2		0	1	0	0	23	19
Wichita	1	1	3	0	0	2	1	0	0	16	37
SOUTH ATLANTIC											
Delaware:											
Wilmington	2	0	0	0	0	1	0	1	1	2	29
Maryland:											
Baltimore	15	23	0	0	0	16	3	2	0	74	185
Cumberland	0	0	0	0	0	1	1	0	0	0	11
Frederick	0	0	0	0	0	0	0	0	0	0	0
District of Columbia:											
Washington	10	14	1	10	0	10	2	1	0	2	101
Virginia:											
Lynchburg	1	1	1	0	0	1	1	4	0	3	11
Norfolk	0	1	0	0	0	4	1	0	0	0	
Richmond	1	1	1	0	0	4	1	0	0	5	53
Roanoke	0	3	0	3	0	0	1	0	0	3	13
West Virginia:											
Charleston	1	0	1	0	0	1	1	1	0	0	11
Wheeling	2	1	0	0	0	0	1	0	0	4	14
North Carolina:											
Raleigh	0	0	0	0	0	1	1	0	0	7	7
Wilmington	0	1	0	0	0	1	0	0	1	10	12
Winston-Salem	0	0	1	0	0	8	1	1	1	21	17
South Carolina:											
Charleston	0	0	1	1	0	0	1	3	1	3	18
Columbia	0	0	0	0			1	1		15	15
Greenville	0	0	0	0	0	0	1	1	0	4	2
Georgia:											
Atlanta	2	6	3	2	0	6	2	7	1	11	65
Brunswick	0	0	0	0	0	1	0	0	1	0	6
Savannah	0	0	0	0	0	2	1	0	1	0	29
Florida:											
Miami	0	0		0	0	0	1	0	0	11	33
St. Petersburg	0	0	0	0	0	1	0	0	0	0	8
Tampa	0	2	0	0	0	3	1	0	0	0	33
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0	2	0	0	0	0	0		0	0	21
Louisville	3	9	0	1	0	1	3	0	0	10	64
Tennessee:											
Memphis	1	3	1	8	0	8	2	4	1	6	66
Nashville	1	0	1	0	0	3	2	6	0	0	41
Alabama:											
Birmingham	1	2	2	2	0	6	3	1	0	7	62
Mobile	1	0	1	0	0	1	2	1	1	0	19
Montgomery	1	0	0	0	0	0	1	0	0	3	

City reports for week ended June 25, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	0	0	0	0			0	1		2	
Little Rock	0	0	0	0	0	1	2	0	0	3	
Louisiana:											
New Orleans	2	3	0	0	0	13	4	1	2	19	128
Shreveport	0	0	0	1	0	0	1	0	0	1	22
Oklahoma:											
Oklahoma City	0	0	3	0	0	1	1	2	0	0	45
Tulsa		0		0				1		1	
Texas:											
Dallas	1	3	1	2	0	1	3	0	0	3	47
Galveston	0	0	0	0	0	4	0	2	0	0	19
Houston	1	3	1	0	0	3	1	0	0	0	46
San Antonio	0	0	0	0	0	9	2	1	0	0	51
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	0	0	0	0	12	8
Great Falls	1	0	1	3	0	0	0	0	0	0	9
Helena	0	0	0	3	0	0	0	0	0	0	6
Missoula	0	1	0	0	0	0	0	1	0	0	8
Idaho:											
Boise	0	0	1	0	0	0	0	0	0	0	5
Colorado:											
Denver	7	21	0	1	0	5	0	0	0	3	65
Pueblo	1	20	0	0	0	0	0	1	0	0	10
New Mexico:											
Albuquerque	1	2	0	0	0	5	0	0	0	0	13
Utah:											
Salt Lake City	2	6	1	3	0	2	0	0	0	20	24
Nevada:											
Reno	0	1	0	0	0	0	0	0	0	0	3
PACIFIC											
Washington:											
Seattle	8	13	4	1			2	0		14	
Spokane	4	4	3	6			0	0		2	
Tacoma	2	2	2	0	0	0	0	0	0	3	20
Oregon:											
Portland	5	2	6	5	0	2	1	0	0	2	69
California:											
Los Angeles	15	24	5	0	0	33	3	1	0	19	262
Sacramento	0	0	1	1	0	3	1	0	0	1	25
San Francisco	9	10	2	0	0	8	0	2	1	18	128

Division, State, and city	Cerebrospinal meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Boston	0	0	0	0	0	0	0	2	1
MIDDLE ATLANTIC									
New York:									
New York	4	3	5	7	0	0	2	5	1
New Jersey:									
Newark	1	0	0	0	0	0	0	0	0
Pennsylvania:									
Philadelphia	0	0	1	0	1	1	0	0	0

City reports for week ended June 25, 1927—Continued

Division, State, and city	Cerebrospinal meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	0	0	0	1	0	0	0	0	0
Illinois:									
Chicago	6	3	0	0	0	0	0	0	0
Springfield	0	0	0	0	1	1	0	0	0
Michigan:									
Detroit	2	0	2	0	0	0	0	0	0
Flint	2	0	0	1	0	0	0	0	0
Wisconsin:									
Milwaukee	1	2	0	0	0	0	0	0	0
Racine	2	1	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	0	1	0	0	0	0	0	0	0
St. Paul	1	1	0	0	0	0	0	1	0
SOUTH ATLANTIC [1]									
Maryland:									
Baltimore	0	0	1	0	0	0	1	0	0
District of Columbia:									
Washington	0	0	0	0	1	1	0	0	0
North Carolina:									
Winston-Salem	0	0	0	0	1	0	0	0	0
Georgia: [2]									
Atlanta	1	0	0	0	1	1	0	1	0
EAST SOUTH CENTRAL									
Tennessee:									
Memphis	0	0	0	1	2	1	0	0	0
Nashville	0	0	0	0	1	0	0	0	0
Alabama:									
Birmingham	0	0	0	0	2	0	0	0	0
WEST SOUTH CENTRAL									
Louisiana:									
New Orleans	0	0	2	2	1	1	0	0	0
Oklahoma:									
Oklahoma City	0	0	0	1	0	0	0	0	0
Texas:									
Dallas	0	0	0	0	0	1	0	1	1
MOUNTAIN									
Montana:									
Great Falls	1	1	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	1	-------	0	-------	0	-------	0	0	-------
Spokane	2	-------	0	-------	0	-------	0	0	-------
Oregon:									
Portland	2	2	0	1	0	0	0	0	0
California:									
Los Angeles	0	0	0	0	0	0	0	4	0
San Francisco	1	0	0	0	0	0	0	2	0

[1] Dengue: 1 case at Charleston, S. C. [2] Typhus fever: 1 case and 1 death at Savannah, Ga.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended June 25, 1927, compared with those for a like period ended June 26, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had esti-

mated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, May 22 to June 25, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	May 29, 1926	May 28, 1927	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927
101 cities	122	171	117	158	136	[2] 162	113	151	130	[3] 162
New England	80	160	78	160	68	132	78	118	59	[3] 114
Middle Atlantic	145	234	135	235	156	248	125	217	152	270
East North Central	108	145	119	124	146	126	131	142	162	132
West North Central	165	91	210	81	234	81	169	79	192	46
South Atlantic	95	145	47	127	60	[2] 124	67	118	45	107
East South Central	41	97	16	61	26	20	16	41	10	36
West South Central	64	84	56	67	47	46	43	55	43	67
Mountain	128	144	109	180	128	369	146	207	118	153
Pacific	158	196	131	128	158	126	102	115	131	113

MEASLES CASE RATES

	May 29, 1926	May 28, 1927	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927
101 cities	1,266	550	1,005	448	930	[2] 426	749	361	619	[3] 302
New England	1,061	434	726	313	658	457	493	406	425	[3] 329
Middle Atlantic	957	366	752	282	708	299	586	281	477	247
East North Central	1,189	373	1,067	324	1,026	296	1,003	261	838	214
West North Central	3,086	655	2,231	461	2,051	373	1,264	248	942	216
South Atlantic	1,529	1,364	1,203	1,005	1,093	[2] 851	818	694	695	531
East South Central	2,368	321	1,655	382	1,391	158	693	132	610	132
West South Central	112	466	86	503	125	424	77	268	95	130
Mountain	1,303	1,052	1,249	620	921	566	702	342	793	450
Pacific	798	1,063	691	1,097	589	1,139	597	971	482	843

SCARLET FEVER CASE RATES

	May 29, 1926	May 28, 1927	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927
101 cities	274	295	230	220	260	[2] 241	233	198	212	[3] 190
New England	257	365	248	288	255	323	203	265	236	[3] 238
Middle Atlantic	212	364	209	256	195	287	222	224	210	223
East North Central	337	302	245	212	333	247	273	216	251	209
West North Central	700	246	419	236	627	195	484	163	357	159
South Atlantic	158	121	188	78	158	[2] 110	130	82	151	96
East South Central	171	138	124	102	78	66	47	71	47	82
West South Central	116	25	163	21	86	34	69	8	30	38
Mountain	100	899	219	782	118	719	128	665	118	441
Pacific	179	209	169	186	236	204	214	181	158	139

SMALLPOX CASE RATES

	May 29, 1926	May 28, 1927	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927
101 cities	19	29	15	22	16	[2] 20	11	19	16	[3] 16
New England	0	0	0	0	0	0	0	0	0	[3] 0
Middle Atlantic	1	0	0	0	0	0	0	0	0	0
East North Central	13	49	9	33	12	21	10	21	14	12
West North Central	44	42	40	24	28	32	32	30	44	58
South Atlantic	28	40	34	33	37	[2] 20	30	36	26	20
East South Central	62	61	83	92	52	107	10	56	88	56
West South Central	99	29	43	17	34	8	26	13	17	13
Mountain	36	27	27	36	46	27	27	54	18	90
Pacific	32	84	24	60	54	92	24	65	32	21

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.
[2] Greenville, S. C., not included.
[3] Barre, Vt., not included.

Summary of weekly reports from cities, May 22 to June 25, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	May 29, 1926	May 28, 1927	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927
101 cities	10	9	9	13	12	[2] 11	11	13	12	[3] 11
New England	7	9	0	9	17	5	19	12	9	[3] 2
Middle Atlantic	5	6	9	5	6	6	9	6	10	4
East North Central	9	7	5	7	4	7	3	8	4	6
West North Central	4	4	8	12	6	14	10	6	4	6
South Atlantic	26	18	32	29	26	[2] 18	28	27	30	40
East South Central	31	31	10	61	57	41	21	82	36	61
West South Central	13	25	9	38	52	34	30	38	30	21
Mountain	0	18	9	9	9	0	0	18	0	18
Pacific	11	8	8	26	13	21	8	8	16	8

INFLUENZA DEATH RATES

	May 29, 1926	May 28, 1927	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927
95 cities	12	9	8	7	10	[2] 6	7	6	5	[3] 7
New England	9	9	2	2	12	0	9	2	0	[3] 5
Middle Atlantic	11	8	6	9	9	5	9	5	6	6
East North Central	11	4	8	4	10	4	3	5	3	5
West North Central	13	12	8	6	4	4	4	2	6	10
South Atlantic	11	13	8	17	6	[2] 9	4	9	6	2
East South Central	26	25	36	5	36	10	16	5	5	25
West South Central	9	26	13	17	18	26	22	17	22	4
Mountain	9	9	18	0	9	9	0	9	0	27
Pacific	11	3	4	3	0	7	4	0	0	10

PNEUMONIA DEATH RATES

	May 29, 1926	May 28, 1927	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927
95 cities	119	100	105	93	95	[2] 94	87	87	73	[3] 74
New England	123	144	116	116	101	88	87	107	68	[3] 84
Middle Atlantic	145	116	131	108	110	112	95	95	83	85
East North Central	107	85	98	79	87	93	74	86	60	71
West North Central	84	87	51	58	59	50	74	48	44	52
South Atlantic	110	86	79	110	96	[2] 65	112	61	95	46
East South Central	171	61	124	51	124	112	98	71	124	56
West South Central	102	90	93	82	88	103	66	95	71	43
Mountain	91	36	146	72	82	90	100	153	109	54
Pacific	64	100	67	97	67	83	74	100	42	131

[2] Greenville, S. C., not included.

[3] Barre, Vt., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

THE FAR EAST

Reports for weeks ended June 11 and June 18, 1927.—The following reports for the weeks ended June 11 and June 18, 1927, were transmitted by the eastern bureau of the health section of the secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Week ended June 11, 1927

Maritime towns	Plague		Cholera		Smallpox		Maratime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths		Cases	Deaths	Cases	Deaths	Cases	Deaths
Ceylon: Colombo	2	2	0	0	0	0	French Indo-China:						
British India:							Saigon and Cholon	0	0	2	1	0	0
Bombay	....	3	....	0	44	24	Tourane	0	0	1	0	0	0
Calcutta	....	0	....	22	44	35	Haiphong	0	0	23	24	0	0
Madras	....	0	....	0	3	1	China:						
Bassein	....	4	....	1	0	0	Canton	0	0	1	1	0	0
Rangoon	....	5	....	1	8	4	Hong Kong	0	0	0	0	1	1
Dutch East Indies:							Manchuria:						
Belawan Deli	0	0	0	0	2	0	Mukden	0	0	0	0	1	0
Banjermasin	0	0	0	0	1	0	Changchun	0	0	0	0	2	0
Siam: Bangkok	1	0	3	2	0	0	Egypt: Alexandria	....	0	0	0	1	0

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Arabia.—Jeddah, Perim, Kamaran, Aden.

Iraq.—Basra.

Persia.—Mohammerah, Bender-Abbas, Bushire, Lingah.

British India.—Karachi, Chittagong, Cochin, Tuticorin, Negapatam, Vizagapatam, Moulmein.

Portuguese India.—Nova Goa.

Federated Malay States.—Port Swettenham.

Straits Settlements.—Penang, Singapore.

Dutch East Indies.—Batavia, Sabang, Pontianak, Semarang, Menado, Cheribon, Makassar, Balikpapan, Padang, Palembang, Surabaya.

Sarawak.—Kuching.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

Portuguese Timor.—Dilly.

Philippine Islands.—Manila, Iloilo, Jolo, Cebu, Zamboanga.

China.—Amoy, Shanghai, Tientsin, Tsingtao.

Macao.

Formosa.—Keelung, Takao.

Chosen.—Chemulpo, Fusan.

Manchuria.—Yingkow, Antung, Harbin.

Kwantung.—Port Arthur, Dairen.

Japan.—Yokohama, Nagasaki, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns.

AUSTRALIA AND OCEANIA—continued

New Guinea.—Port Moresby.

New Britain Mandated Territory.—Rabaul and Kokopo.

New Caledonia.—Noumea.

New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.

Samoa.—Apia.

Fiji.—Suva.

Hawaii.—Honolulu.

Society Islands.—Papeete.

AFRICA

Egypt.—Port Said, Suez.

Anglo-Egyptian Sudan.—Port Sudan, Suakin.

Eritrea.—Massaua.

French Somaliland.—Djibouti.

British Somaliland.—Berbera.

Italian Somaliland.—Mogadiscio.

Zanzibar.—Zanzibar.

Kenya.—Mombasa.

Tanganyika.—Dar-es-Salaam.

Seychelles.—Victoria.

Portuguese East Africa.—Mozambique, Beira, Lourenco-Marques.

Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.

Reunion.—St. Denis.

Mauritius.—Port Louis.

Madagascar.—Majunga, Tamatave, Diego-Suarez.

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from:

Dutch East Indies.—Samarinda, Tarakan.
Union of Socialist Soviet Republics.—Vladivostok.

Belated information:

Week ended June 4.—*Pondicherry,* 2 fatal smallpox cases; *Karikal,* nil.
Week ended May 28.—*Pondicherry* and *Karikal,* nil.

Week ended June 18, 1927

Maritime towns	Plague Cases	Plague Deaths	Cholera Cases	Cholera Deaths	Smallpox Cases	Smallpox Deaths
British India:						
Bombay	----	2	----	0	24	19
Negapatam	----	0	----	0	2	1
Madras	----	0	----	0	1	0
Vizagapatam	----	0	----	0	2	1
Calcutta	----	0	----	43	32	24
Bassein	----	9	----	2	0	0
Rangoon	----	1	----	0	14	5
Dutch East Indies:						
Banjermasin	0	0	0	0	1	0
Straits Settlements.						
Singapore	0	0	0	0	3	0

Maritime towns	Plague Cases	Plague Deaths	Cholera Cases	Cholera Deaths	Smallpox Cases	Smallpox Deaths
Siam: Bangkok	0	0	3	2	1	1
French Indo-China:						
Saigon and Cholon	0	0	2	2	0	0
Haiphong	0	0	11	11	0	0
China:						
Shanghai	0	0	1	0	0	0
Hong Kong	0	0	0	0	1	1
Manchuria: Mukden	0	0	0	0	1	0
Egypt: Alexandria	0	0	0	0	1	0

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Arabia—Jeddah, Perim, Aden.

Iraq—Basra.

Persia.—Mohammerah, Bender-Abbas, Bushire, Lingah.

Ceylon.—Colombo.

British India.—Karachi, Chittagong, Cochin, Tuticorin, Moulmein.

Portuguese India.—Nova Goa.

Federated Malay States.—Port Swettenham.

Straits Settlements.—Penang.

Dutch East Indies.—Batavia, Sabang, Pontianak, Semarang, Menado, Cheribon, Makassar, Balikpapan, Padang, Palembang, Surabaya, Tarakan, Belawan-Deli.

Sarawak.—Kuching.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

French Indo-China.—Tourane.

Portuguese Timor.—Dilly.

Philippine Islands.—Manila, Iloilo, Jolo, Cebu, Zamboanga.

China.—Amoy, Tientsin, Tsingtao.

Macao.

Formosa.—Keelung, Takao.

Chosen.—Chemulpo, Fusan.

Manchuria.—Yingkow, Antung, Harbin.

Kwantung.—Port Arthur, Dairen, Changchun.

Japan.—Yokohama, Nagasaki, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns.

AUSTRALASIA AND OCEANIA—continued

New Guinea.—Port Moresby.

New Britain Mandated Territory.—Rabaul and Kokopo

New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.

Samoa.—Apia.

New Caledonia.—Noumia.

Fiji.—Suva.

Hawaii.—Honolulu.

Society Islands.—Papeete.

AFRICA

Egypt.—Port Said, Suez.

Anglo-Egyptian Sudan.—Port Sudan, Suakin.

Eritrea.—Massaua.

French Somaliland.—Djibouti.

British Somaliland.—Berbera.

Italian Somaliland.—Mogadiscio.

Zanzibar.—Zanzibar.

Kenya.—Mombasa.

Tanganyika.—Dar-es-Salaam.

Seychelles.—Victoria.

Portuguese East Africa.—Mozambique, Beira, Lourenço-Marques.

Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.

Reunion.—Saint Denis.

Mauritius.—Port Louis.

Madagascar.—Majunga, Tamatave, Diégo-Suarez.

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from:

Arabia.—Kamaran.
Dutch East Indies.—Samarinda.
China.—Canton.
Union of Socialist Soviet Republics.—Vladivostok.

Belated information.

Week ended June 11. *Pondicherry* and *Karikal,* nil.

Movement of infected ships:

Singapore.—*Steamship Halipara* has arrived from *Calcutta* infected with cholera.
Steamship Talamba has arrived from *Hong Kong* infected with smallpox.

Other epidemiological information:

Samoa.—Apia, 4 dysentery cases and 1 death were reported during the week ended June 18.
Solomon Islands.—One measles case has been reported during the same week.

CANADA

Communicable diseases—Quebec—Weeks ended June 18 and 25, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the weeks ended June 18 and 25, 1927, as follows:

WEEK ENDED JUNE 18, 1927

Disease	Cases	Disease	Cases
Chicken pox	5	Scarlet fever	49
Diphtheria	45	Tuberculosis	25
German measles	25	Typhoid fever	106
Measles	50	Whooping cough	10

WEEK ENDED JUNE 25, 1927

Disease	Cases	Disease	Cases
Chicken pox	7	Scarlet fever	57
Diphtheria	40	Smallpox	1
German measles	7	Tuberculosis	67
Influenza	3	Typhoid fever	91
Measles	50	Whooping cough	8

Vital statistics—Nova Scotia—1916-1926.—The following table portrays the trends and fluctuations in the vital statistics of Nova Scotia, Canada, from 1916 to 1926, inclusive:

Year	Births	Deaths	Marriages	Divorces
1916	12, 270	8, 052	3, 726	14
1917	12, 382	7, 583	3, 421	8
1918	12, 421	9, 125	3, 611	24
1919	12, 508	9, 200	3, 585	36
1920	13, 346	7, 439	4, 482	45
1921	12, 793	6, 573	3, 780	41
1922	13, 164	6, 628	3, 169	35
1923	11, 856	6, 900	3, 246	22
1924	11, 698	6, 564	2, 999	42
1925	11, 596	6, 078	2, 964	30
1926	11, 605	6, 424	[1]	[1]

[1] Figures not available.

The infant mortality rate in Nova Scotia has shown a marked reduction in the last five years. The Department of Public Health states that in 1925 and 1926 the death rate of infants under 1 year of age was between 70 and 80 per thousand births.

Typhoid fever—Montreal—January 2–July 2, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	Apr 9, 1927	386	40
Jan. 15, 1927	4	3	Apr. 16, 1927	175	38
Jan. 22, 1927	1	2	Apr. 23, 1927	125	43
Jan. 29, 1927	3	1	Apr. 30, 1927	105	23
Feb. 5, 1927	1	0	May 7, 1927	106	19
Feb 12, 1927	0	0	May 14, 1927	367	16
Feb. 19, 1927	1	2	May 21, 1927	770	26
Feb 26, 1927	1	1	May 28, 1927	353	38
Mar. 5, 1927	9	1	June 4, 1927	239	37
Mar 12, 1927	203	4	June 11, 1927	128	36
Mar. 19, 1927	383	14	June 18, 1927	86	
Mar. 26, 1927	568	22	June 25, 1927	75	23
Apr. 2, 1927	649	48	July 2, 1927	66	21

CHILE

Typhoid fever—March 16–31,[1] 1927—April 1–15, 1927.—Typhoid fever has been reported in Chile as follows: March 16–31, 1927, 64 cases, of which 14 cases occurred at Santiago (population, 553,498), and 10 at Valparaiso (population, 182,498); April 1–15, 1927, 44 cases, at Santiago, 13 cases; at Valparaiso, 1 case. For the first named period one fatality was reported, occurring at Coquimbo, and for the second period, four fatalities, of which two were at Santiago and one was at Valparaiso.

Typhus fever.—During the period March 16–31, 1927, two cases of typhus fever were reported, occurring at Ligua (population, 2,999).

CUBA

Communicable diseases—Habana—June, 1927.—During the month of June, 1927, communicable diseases were reported in Habana, Cuba, as follows:

Disease	New cases	Deaths	Remaining under treatment June 30, 1927	Disease	New cases	Deaths	Remaining under treatment June 30, 1927
Cerebrospinal meningitis	1	1		Malaria [1]	51		47
Chicken pox	18		42	Measles	39		54
Diphtheria	5		2	Scarlet fever	1		1
Filariasis			1	Typhoid fever [1]	54	11	49
Leprosy	1		13				

[1] Many of these cases from the interior.

CURAÇAO (WEST INDIES)

Smallpox (alastrim).—During the week ended June 4, 1927, a case of smallpox, reported as alastrim, was notified in Curaçao.

[1] Public Health Reports, May 13, 1927, p. 1341.

LATVIA

Communicable diseases—April, 1927.—During the month of April, 1927, communicable diseases were reported in the Republic of Latvia as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	3	Puerperal fever	3
Diphtheria	53	Scarlet fever	321
Erysipelas	21	Smallpox	1
Influenza	482	Trachoma	18
Malaria	1	Typhoid fever	45
Measles	723	Typhus fever	12
Mumps	7	Whooping cough	93
Paratyphoid fever	2		

Estimated population: 1,900,000.

LIBERIA

Yellow fever—Monrovia—May 29-June 4, 1927.—During the week ended June 4, 1927, one case of yellow fever with one death was reported at Monrovia, Liberia.

NEW ZEALAND

Communicable diseases—April 13–May 9, 1927.—During the four weeks from April 13 to May 9, 1927, communicable diseases were reported in New Zealand, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Cerebrospinal meningitis	3	1	Poliomyelitis (infantile paralysis)	5	
Diphtheria	139	8	Puerperal fever	17	5
Influenza	5		Scarlet fever	163	2
Lethargic encephalitis	4	2	Trachoma	1	
Ophthalmia neonatorum	2		Tuberculosis	89	34
Pneumonia	44	8	Typhoid fever	22	

PERU

Plague—April, 1927.—During the month of April, 1927, 15 cases of plague with 5 deaths were reported in Peru. The occurrence was distributed by Departments as follows: Ica, 1 case; Lambayeque, 1 case; Libertad, 6 cases; Lima, 7 cases, including 5 with 1 death in the city of Lima.

SENEGAL

Plague—June 2–8, 1927.—During the week ended June 8, 1927, plague was reported in Senegal, West Africa, as follows: Baol (region)—cases, 2; Guindel, a suburb of Rufisque—cases, 6; Thies—cases, 5; Tivaouane—1 case; total, 14 cases.

Yellow fever.—During the same period 5 fatal cases of yellow fever were reported in Senegal, of which 1 case occurred at M'Bour, 1 at Ouakam, a suburb of Dakar, and 3 cases at Tivaouane. The occurrence was in Europeans.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the lists of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended July 15, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Swatow	May 22-28	2	5	
French Settlements in India	Mar. 20-Apr 30	4	2	
India				May 8-14, 1927: Cases, 8,856; deaths, 3,981.
Calcutta	May 15-21	96	49	
Rangoon	May 15-28	5	2	
Siam				May 15-21, 1927: Cases, 11; deaths, 6 Apr 1-May 21, 1927: Cases, 456; deaths, 313.
Bangkok	May 15-21	5	3	

PLAGUE

Place	Date	Cases	Deaths	Remarks
Argentina.				
Formosa	Reported July 6	3		
British East Africa:				
Kenya	Apr. 24-May 7	7	14	
Tanganyika	Mar. 29-May 7		36	
Uganda	Jan. 1-31	89	83	
Do	Feb. 1-28	49	38	
Do	Mar. 27-May 14	72	57	
Ceylon				
Colombo	May 15-21	3	3	One plague rodent.
Greece.				
Patras	June 5-9	2		
India				May 8-14, 1927: Cases, 693; deaths, 543.
Bombay	May 15-28	29	28	
Madras	May 1-14	10	7	Presidency.
Rangoon	May 15-28	8	6	
Indo-China (French)	Apr. 1-May 10	7		
Iraq				
Baghdad	Apr 8-16	3	1	
Java				
Batavia	May 15-21	14	15	Province.
Surabaya	May 1-7	3	3	
Peru				April, 1927: Cases, 15; deaths, 6.
Departments—				
Ica	Apr 1-30	1		At Ica
Lambayeque	do	1		At Chiclayo
Libertad	do	6	3	At Pacasmayo and in Trujillo Province.
Lima	do	7	2	At Huacho, 1 case, Chosica, 1 case, 1 death.
Lima City	do	5	1	
Senegal				June 2-8, 1927: Cases, 14.
Baol	June 2-8	2		Region
Guindel	do	6		Suburb of Rufisque.
Thies	do	5		
Tivaouane	do	1		
Siam				Apr. 1-May 21, 1927: Cases, 8; deaths, 7

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-May 10	168		
British East Africa:				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 29-May 7		22	Territory.
Canada:				
Alberta—				
Calgary	June 19-25	2		
Quebec	June 19-25	1		
Ceylon				May 1-7, 1927: Cases, 3; deaths, 1.
China.				
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-28	2		
Fushun	do	5		
Mukden	May 22-28	2		

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended July 15, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Chosen	Feb. 1-Apr. 30	354	84	
Curaçao				May 29-June 4, 1927: One case (alastrim).
France				April, 1927: Cases, 66.
French Settlements in India	Mar. 20-Apr. 30	96	59	
Gold Coast				March, 1927. Cases, 18; deaths 4.
Great Britain:				
England and Wales	June 5-18			Cases, 462.
Bradford	May 29-June 11	2		
Newcastle on Tyne	June 12-18	1		
India				May 8-14, 1927: Cases, 7,406; deaths, 1,780.
Bombay	May 15-28	98	64	
Calcutta	May 15-21	55	41	
Madras	May 22-June 4	3	1	
Rangoon	May 15-28	30	7	
Indo-China (French)	Mar. 21-Apr. 10	190		
Iraq:				
Baghdad	Apr. 10-16	2		
Basra	do	1		
Italy	Apr. 10-May 7	5		
Japan	Apr. 3-May 7	19		
Latvia				Apr. 1-30, 1927: One case.
Mexico				Feb. 1-28, 1927: Deaths, 151.
San Luis Potosi	June 12-18		3	
Morocco	Apr. 1-30	55		
Poland				Apr. 17-23, 1927: Cases, 2.
Portugal:				
Lisbon	June 5-11	2		
Siam				May 15-21, 1927: Cases, 2; deaths, 2. Apr. 1-May 21, 1927. Cases, 57; deaths, 19.
Bangkok	May 15-21	1	1	
Straits Settlements:				
Singapore	May 1-7	2	1	
Tunisia				Apr. 1-May 10, 1927. Cases, 5.
Tunis	June 1-10	1		

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria				Apr. 21-May 10, 1927: Cases, 109; deaths, 16
Algiers	May 15-June 10	12		
Oran	June 1-10	6		
Bulgaria				March, 1927: Cases, 58; deaths, 6.
Sofia	June 4-10	1		
Chile:				
Ligua	Mar. 16-31	2		
Chosen				Feb. 1-Apr. 30, 1927: Cases, 330; deaths, 30.
Iraq:				
Baghdad	Apr. 24-30	1		
Latvia				April, 1927: Cases, 12.
Mexico				Feb. 1-28, 1927: Deaths, 26.
Mexico City	June 5-11	2		Including municipalities in Federal District.
Morocco	Apr. 1-May 7	249		
Poland	Apr. 10-30	398	33	
Rumania	Apr. 3-May 7	583	41	
Tunisia	Apr. 21-May 10	78		
Union of South Africa:				
Cape Province—				
East London	May 22-28	1		

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Liberia:				
Monrovia	May 29-June 4	1	1	
Senegal:				
M'Bour	June 2-8	1	1	
Ouakam	do	1	1	
Tivaouane	do	3	3	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to July 8, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China				
Swatow	May 15-21	5	3	
India				Apr. 17-23, 1927: Cases, 5,949; deaths, 3,226.
Bombay	May 8-14	1		
Calcutta	do	119	85	
Rangoon	May 8-14	2	1	
Indo-China (French).				
Saigon	Apr. 30-May 6	54	37	Including Cholon.
Siam				May 1-14, 1927. Cases, 51; deaths, 27.
Bangkok	May 1-14	13	2	

PLAGUE

Place	Date	Cases	Deaths	Remarks
Ceylon:				
Colombo	May 1-14	3	1	Plague rats, 3.
Egypt				May 21-27, 1927. Cases, 1. Total from Jan. 1-May 27, 1927: Cases, 40; corresponding period, 1926: Cases, 43.
Tanta District	May 21-27	1		
Greece:				
Patras	May 30-June 11	2		
India				Apr. 17-May 7, 1927: Cases, 4,891, deaths, 3,578.
Bombay	May 8-14	25	23	
Rangoon	do	2	3	
Java.				
Batavia	May 1-14	34	34	Province.
East Java and Madura—Pasoeroean Residency	May 9			Outbreak reported at Ngadiwono.
Surabaya	Apr. 17-30	21	21	
Madagascar				Mar. 16-31, 1927. Cases, 96; deaths, 86. Bubonic, 42; pneumonic, 21, septicemic, 33 cases.
Province—				
Ambositra	Mar. 16-31	15	10	Bubonic, 11, pneumonic, 1; septicemic, 3.
Antsirabe	do	1	1	Septicemic.
Miarinarivo (Itasy)	do	27	27	Bubonic, 3, pneumonic, 9; septicemic, 15
Moramanga	do	6	6	Bubonic, 3; septicemic, 3.
Tananarive	do	43	38	Bubonic, 24; pneumonic, 11; septicemic, 8.
Tananarive Town	do	4	4	Bubonic, 1; septicemic, 3.
Senegal	May 23-29			Cases, 25, deaths, 10
Rufisque	do	23	10	
Thies District	do	2		
Siam				Apr. 1-May 14, 1927: Cases, 8; deaths, 7.
Bangkok	May 8-14	1	1	
Tunisia	Reported May 20	15		In districts of Sfax and Susa.
Turkey:				
Constantinople	May 13-19	1		
Union of South Africa:				
Cape Province—Maraisburg District	May 1-14	2	2	Native.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	May 11-20	4		
Oran	May 21-31	15		
Brazil.				
Rio de Janeiro	May 22-28	1		
British South Africa:				
Northern Rhodesia	Apr. 30-May 6	1		Native.

[1] From medical officers of the Public Health Service, American consuls, and other sources. For reports received from January 2 to June 24, 1927, see Public Health Reports for June 24, 1927. The tables of epidemic diseases are terminated semiannually and new tables begun.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to July 8, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Canada	June 5-18			Cases, 68.
Alberta	June 12-18	15		
Calgary	do	3		
British Columbia—				
Vancouver	May 23-29	2		
Manitoba	June 5-18			Cases, 6.
Winnipeg	June 12-24	5		
Ontario	June 5-18			Cases, 34.
Ottawa	June 12-25	10		
Saskatchewan	June 12-18	13		
China:				
Amoy	May 8-14	1		
Chefoo	do			Present.
Foochow	do			Do.
Hong Kong	do	4	2	
Manchuria—				
Dairen	May 2-8	3	3	
Ssupingkai	May 8-14	1		
Tientsin	May 8-21	7		
Chosen				
Chinnampo	Apr. 1-30	1		
Fusan	do	1		
Seishin	do	1		
Egypt:				
Alexandria	May 21-27	3	1	
Great Britain				
England and Wales	May 22-June 4			Cases, 520.
London	May 15-21	1		
Scotland—				
Dundee	May 29-June 4	3		
India				Apr 17-May 7, 1927. Cases, 25,220, deaths, 5,961.
Bombay	May 8-14	58	33	
Calcutta	do	64	47	
Karachi	May 15-28	4	3	
Rangoon	May 8-14	14	5	
Java.				
Batavia	do	1		
East Java and Madura	Apr 24-30	1		
Latvia	Apr 1-30	1		
Mexico:				
San Luis Potosi	May 29-June 4		2	
Tampico	June 1-10	1	1	
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in two localities.
Persia				
Teheran	Feb 21-Mar. 21		1	
Poland	Apr 10-16	1		
Portugal:				
Lisbon	May 29-June 4	3		
Siam				May 1-14, 1927. Cases 17, deaths, 5.
Bangkok	May 1-14	4	3	
Spain.				
Valencia	May 29-June 4	2		
Union of South Africa:				
Transvaal—				
Barberton District	May 1-7			Outbreaks

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	May 11-20	9		
Oran	May 21-31	4		
Chosen:				
Seoul	Apr 1-30	1		
Czechoslovakia				Apr 1-30, 1927 Cases, 21.
Egypt:				
Alexandria	May 21-27	1		
Estonia				Apr. 1-30, 1927: Case, 1.
Latvia	Apr 1-30	12		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to July 8, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Mexico:				
Mexico City	May 29-June 4	2		Including municipalities in Federal District.
Palestine	May 24-June 6			Cases, 3.
Haifa	do	2		
Mahnaim	May 17-23	1		In Safad District.
Safad	May 17-30	2		
Portugal:				
Lisbon	May 29-June 4	1		
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa	Apr. 1-30			Cases, 55; deaths, 8. Native. In Europeans, cases, 2.
Cape Province	do	42	5	
Glen Grey District	May 1-7			Outbreaks.
Qumbu District	do			Do.
Natal	Apr. 1-30	7	3	
Orange Free State	do	5		
Transvaal	do	1		
Yugoslavia	May 1-31			Cases, 4.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Senegal	May 27			Cases, 3.
M'Bour	do	1	1	
Tivaouane	do	2	2	

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TREASURY DEPARTMENT

PUBLIC HEALTH REPORTS

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VOLUME 42 :: :: NUMBER 29

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SPECIAL ARTICLES

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON
1927

UNITED STATES PUBLIC HEALTH SERVICE

HUGH S CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

Asst Surg Gen C C PIERCE, *Chief of Division*

The PUBLIC HEALTH REPORTS are issued weekly by the United States Public Health Service through its Division of Sanitary Reports and Statistics, pursuant to acts of Congress approved February 15, 1893, and August 14, 1912

They contain (1) Current information of the prevalence and geographic distribution of preventable diseases in the United States in so far as data are obtainable, and of cholera, plague, smallpox, typhus fever, yellow fever, and other communicable diseases throughout the world (2) Articles relating to the cause, prevention, or control of disease (3) Other pertinent information regarding sanitation and the conservation of the public health

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PUBLIC HEALTH REPORTS

VOL. 42 JULY 22, 1927 NO. 29

REPORT OF THE UNITED STATES PUBLIC HEALTH SERVICE ON THE MONTREAL TYPHOID-FEVER SITUATION

The board of officers convened under bureau order of June 16, 1927, for the purpose of surveying the typhoid-fever situation in Montreal, Canada, and the vicinity thereof, with a special view to the determination of measures needed to prevent the spread of the infection from that city and vicinity into the United States, has the honor to submit the following report:

Our survey was begun on June 18 and was terminated on June 29.

Upon arrival at Montreal on the morning of June 18 we conferred with the consul in charge of the United States consulate and with officials of the city, provincial, and Federal health departments.

Our studies included (1) the examination of the typhoid-fever records of the city of Montreal and other parts of the Province of Quebec for the period January 1 to June 18, 1927, and for previous years; (2) a survey of the city water supply and sewerage system; (3) the inspection of milk plants in the city and of milk-receiving stations and dairy farms in the surrounding country; (4) the collection, by personal interview, of detailed epidemiological histories of 203 cases selected so as to be fairly representative of all the cases occurring in the entire epidemic period; and (5) a consideration of the adequacy of the locally operating health forces to cope with the situation.

EXTENT AND FEATURES OF THE OUTBREAK

According to the official records, there were reported in the city of Montreal for the period March 1 to June 28, inclusive, of this year 4,755 cases of typhoid fever with 453 deaths, as against 37 cases with 11 deaths, 48 cases with 18 deaths, and 44 cases with 21 deaths for the period March 1 to June 30 of the years 1926, 1925, and 1924, respectively. From the official record of cases and without consideration of the possible number of additional cases unattended by physicians or not diagnosed and reported, it is evident that since March 1, 1927, Montreal has suffered a severe epidemic of typhoid fever with a case incidence in proportion to population probably unprecedented by any other large city in the world within the present century.

No evidence was obtained by our survey to suggest that either the city water supply or the city sewerage system operated in the spread of the infection causing the epidemic.

The disease was distributed over the greater part of the area of the city with much more concentration in proportion to population in some sections than in others. The geographical distribution of the cases, when considered in connection with the distribution areas of the city water, furnished practically conclusive evidence that the city water supply was not infected as delivered from either of the two separate plants, or in its course through the city mains, so as to have operated importantly in the spread of the infection causing the epidemic.

The distribution of the disease was such, however, as to suggest strongly that the main volume of the infection had been conveyed through some medium other than water which reached a large number of persons in different parts of the city at the same time.

CAUSATION OF EPIDEMIC

According to the official records furnished us, it was found soon after the beginning of the outbreak that a very large proportion of the cases were in persons who gave a history of drinking milk distributed from the plant of the Montreal Dairy Co. (Ltd.). The distribution from this plant constituted in the period of causation of the outbreak about one-eighth of the total milk supply of the city. Judging from the epidemiological case histories obtained by the city health department through detailed inquiry at the homes of patients and from those obtained by ourselves through, usually, direct interviews with patients or convalescents at private homes, in public institutions, and in hospitals, it appears definite that at least six-eighths of the cases in the epidemic were in persons who, in the period of causation, were knowingly exposed to the milk output from the plant of the Montreal Dairy Co. (Ltd.). We found no evidence that there was any significant disproportion of cases among habitual users of milk from any of the other dairy plants in the city.

The local institutions, such as boarding schools, orphanages, and homes for helpless adults, with a total population of approximately 15,000, furnished a striking contrast. In those institutions whose inmates used milk from the plant of the Montreal Dairy Co. (Ltd.) the rate of prevalence of typhoid fever was high, while in those whose inmates, though constituting a large majority of the total institution population of the city, used milk from various other milk plants, the rate of prevalence was little, if any, higher than that for the general population in the corresponding periods in the several preceding years.

The age distribution of the disease was also highly significant. About 32 per cent of the cases in the epidemic were reported among children under 10 years of age. These points and every other point of evidence obtained by us throughout the course of our study of the situation supported the conclusion that the vast bulk of the infection causing the recent epidemic of typhoid fever in Montreal, Canada, was disseminated in the milk distributed from the plant of the Montreal Dairy Co. (Ltd.).

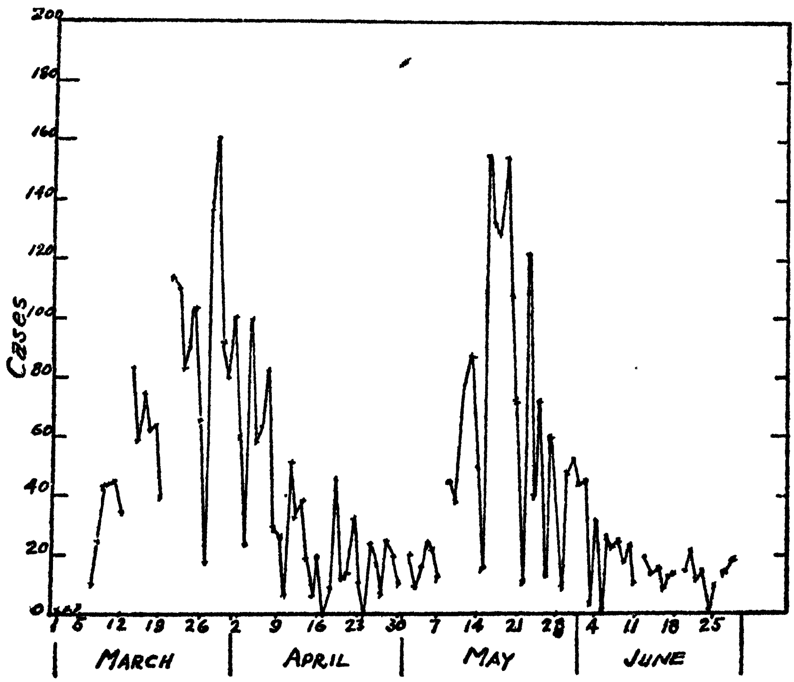
No evidence to support any other conclusion has become apparent to us. Exactly when and how the infection was introduced into this milk supply has not been determined. In view of the tremendously high rate of prevalence of typhoid fever among the persons who were exposed to this infected milk in the period between February 15 and May 15, 1927, it is only reasonable to assume that there was at times within this period heavy dosage infection in this milk when it was ingested. Such evidence of dosage suggests that after the infecting matter was introduced into the milk there were sufficient time and suitable temperature to permit a large multiplication of the typhoid bacilli. Otherwise very gross contamination of the milk with infected human excreta would have to be assumed.

The two accompanying charts indicate, respectively, the daily report of cases and the dates of onset of the cases. The date of onset as given in Chart 2 varies considerably in meaning; but according to the best information we could obtain it means, as a rule, the date which the patient gave as that of the earliest typhoidal symptom or symptoms. From these charts it appears that the causation of the epidemic began about February 15, increased rapidly toward its maximum about February 19, reached its maximum about March 5, continued high until March 18, and then rapidly declined so as to be at less than one-fifth of its maximum rate of operation by March 26. From careful study of individual cases it seems that the decline of causation was greater than is suggested by the chart. In fact it is quite probable that there was a complete cessation of the main current of infection from March 27 to April 20. At about the latter date there was another very sharp rise in the rate of causation. The causation rate of this second outbreak, or recrudescence, reached its maximum about May 2, began a very rapid decline about May 6, and was down to less than one-fifth of its maximum by May 15. The cases reported with onsets subsequent to May 25 have been in decreasing proportion among persons exposed to the milk distributed by the Montreal Dairy Co. (Ltd.), and in markedly increasing proportion among persons exposed to personal contact with previous cases.

The milk supply distributed by this company was obtained from 1,200 to 1,500 farms. The families on the farms producing milk

within the general vicinity of Montreal are, on the average, large. The farms, as a rule, are narrow, and the dwellings along the highways for long distances are close together. The residents are sociable people. We estimate that the milk from the farms furnishing the milk distributed by the Montreal Dairy Co. (Ltd.) was exposed more or less to a population of 20,000. In view of the usual rate of prevalence of typhoid fever in this community, it would be unreasonable to assume that there was no typhoid infection among these persons during the period of causation of the city epidemic. Judging

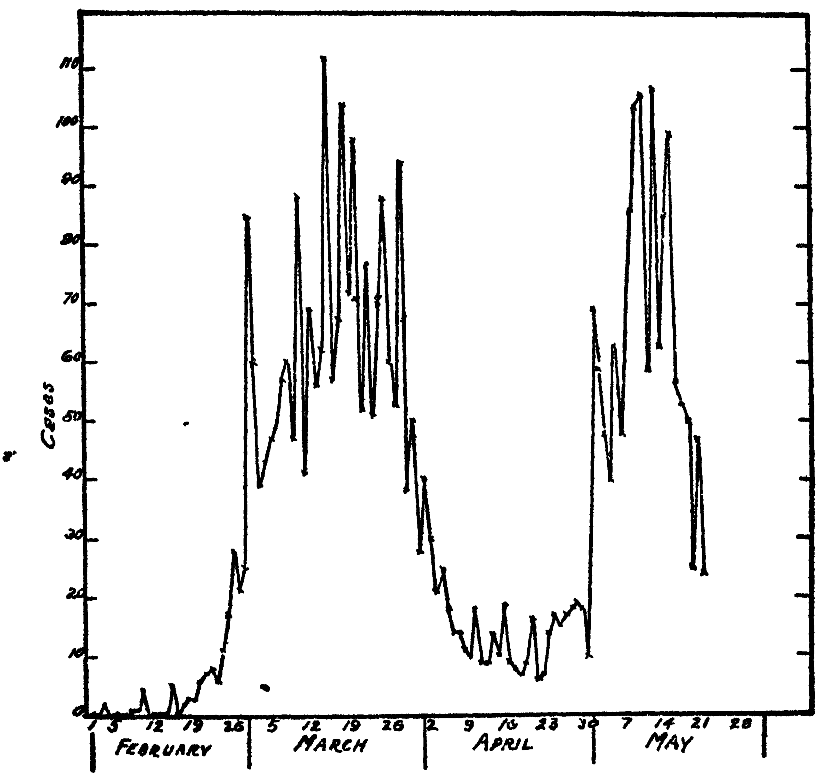
CHART No. 1
MONTREAL TYPHOID FEVER EPIDEMIC, 1927
BY DATE OF REPORTING OF CASES
CITY HEALTH DEPARTMENT RECORDS



from such reports as we received and from quite extensive observations made by us, the average dairy farm in the general vicinity of Montreal presents unsatisfactory sanitary conditions. Open privies and open wells are frequent. In much of the country there is a limestone formation outcropping or near the surface of the ground. Milk-house doors are, in many instances, within a few feet of kitchen doors. Surface streams are used quite commonly as sources of water for the milk houses and for the disposal of sewage from homes upstream.

Some of the milk from the farms was conveyed direct to the city plant of the Montreal Dairy Co. (Ltd.), and some was sent through four receiving stations in the country. At the receiving stations the milk usually was emptied from the farmer's cans, cooled, placed in the company's cans, and then conveyed to the city plant. There was certainly a possibility for the introduction of typhoid infection at these receiving stations. At one of them the water used mainly for washing the interior of the milk-cooling vats and other equipment

CHART No. 2
MONTREAL TYPHOID FEVER EPIDEMIC, 1927
BY DATE OF ONSET OF CASES
CITY HEALTH DEPARTMENT RECORDS



was pumped from a near-by river which was obviously polluted with sewage and privy contents at numerous points upstream from and near the intake for the water. The amount of whole milk transmitted through this station was markedly decreased after March 26 and was discontinued altogether after May 6.

At the city plant the routine procedure was reported to have been as follows: The milk upon delivery was weighed, cooled in a surface cooler, and passed by gravity to storage tanks, where it was held

until needed. From the storage tanks it was passed to the clarifier and thence to the open-surface regenerator. From the regenerator it passed to the Pasteurizing machine, where it was heated to a temperature of 142° to 145° F. and held at that temperature for a period of about 30 minutes. After Pasteurization the milk went through the inside of the pipes of the regenerator, then to the surface cooler, and then to the bottling machine. Inspections of this plant were made by Assistant Sanitary Engineer F. J. Moss, of the United States Public Health Service, who was detailed to assist the board in its survey. Mr. Moss reports that the Pasteurizing machine was of an efficient type, but that as it was probably operated in at least a part of the period of causation of the epidemic, there was a possibility for a very small quantity of milk to leak through the valve leading from the Pasteurizer before being held at the temperature of 142° or more for the full 30 minutes. The charts of the recording thermometer were examined carefully by Mr. Moss and Mr. Crohurst. The charts indicated that the milk which was run through the Pasteurizer within the period of causation of the outbreak was, with occasional minor exceptions, heated to 142° or over and held at that temperature for 30 minutes. Such heating is regarded as sufficient to have killed all typhoid bacilli which may have been in the milk actually so Pasteurized. If all the milk which entered the plant direct from the farms or through the receiving stations was freed by the Pasteurization process from whatever typhoid infection it contained, the question is where and how the infection could have been introduced into the milk in sufficient volume, or so as to become of sufficient volume, to account for the epidemic. According to all the evidence obtained by us, the milk immediately after leaving the Pasteurizing machine was kept at a temperature of 40° F. or below until transferred to the delivery wagons, and as a rule the milk was started on the delivery wagons immediately or within a few hours after being bottled or canned for ultimate delivery. If such was the case, the chances for great multiplication of typhoid bacilli introduced into the milk after Pasteurization would have been exceedingly remote, and very gross contamination of the Pasteurized milk in the plant would have been necessary to account for the tremendous current of infection which went out with the supply of milk distributed from this plant.

It appears that slight contamination of the Pasteurized milk by finger touch or otherwise by workers in the plant was possible. All the evidence, however, seems to us to make untenable such an explanation of the main current of the infection. A search was made by the city and the provincial health departments for possible typhoid bacillus carriers in the plant. One of the employees, the foreman of the

plant, was found on April 6 to give a positive Widal blood test. This man gave a history of having had typhoid fever 20 years previously, when he was 13 years of age. His feces have been examined on nine occasions and his urine on seven occasions since April 8 by either the city or the provincial health department laboratory, or both. The urine has been found negative on all examinations. The feces were found positive for *B. typhosus* on four of the examinations. The last two specimens of feces obtained from him on June 17 and 25 were both found negative for typhoid. This man states that he knows of no attack of typhoid fever among any of his immediate household associates since his attack 20 years ago. He worked for about seven years at the creamery of the Montreal Dairy Co. (Ltd.) immediately before entering upon his duties at the milk plant of that company on February 5, 1927. He states that as foreman of the milk plant he seldom touched with his hands the milk either before or after it was Pasteurized, but that while engaged at the creamery he frequently had finger contact with both the equipment and the cream. No evidence of a typhoid outbreak traceable to the cream from the creamery while he was engaged there has been presented. This man appears tidy and seems to be of very cleanly habits. He was removed from the milk plant on April 16. The time he began duty at the milk plant synchronized with the beginning of the causation period of the epidemic, and this might be considered as possibly suggestive of cause and effect. It is difficult, however, to conceive, if he started the current of infection in the milk, why he ceased to infect the milk during the period from about March 26 to the date upon which he was removed from the plant, April 16. It is entirely unreasonable to suspect that he was a causative factor in the second outbreak or recrudescence which had the peak of its causation about May 2.

The possibility that other persons working in or visiting the plant may have been minor contributory factors in introducing typhoid infection into the milk may be argued, but all the general epidemiological evidence would definitely oppose any hypothesis upon which to base a conclusion that the main current of the infection was derived from personal touch within the milk plant.

On the other hand, the general epidemiological evidence supports the view that the main current of the infection causing the epidemic was in all probability in the raw milk as this milk entered the plant, and that through advertence or inadvertence on the part of the workers in the plant a very considerable proportion of the raw milk which entered and was distributed from the plant escaped efficient Pasteurization, or even a run through the Pasteurizer, regularly or at least frequently during the periods February 15 to March 27 and from April 20 to May 15, 1927. From a study of records available

to us it appears certain that at times during the period of causation of the epidemic more raw milk was delivered to the plant than was run through the Pasteurizer.

OTHER POSSIBLE FACTORS

The epidemiological case histories and other evidence obtained by us eliminated all factors other than milk which might operate preponderantly in the causation of such an epidemic. The hypothetical factors so eliminated were vegetables, shellfish, "carriers" in public eating places, etc.

The case histories obtained by us do suggest that cream and ice cream distributed by the Montreal Dairy Co. (Ltd.)—the ice cream having been made at the older plant of the company which was operated in close connection with the milk plant—served as a factor of causation for a small proportion of the cases occurring in the second outbreak, or recrudescence.

ADEQUACY OF LOCAL HEALTH SERVICE

When the epidemic began, the city health department was operating on an annual budgetary basis of 40 cents per capita. The working force has since been augmented by the employment of four sanitary inspectors. Only one inspector is especally engaged in the inspection of Pasteurization plants, of which there are 41 or 42 in the city, and he is said to devote a considerable proportion of his time to other duties. The conditions generally found on the dairy farms indicate that the sanitary control of these farms has been and is yet far from adequate.

Only eight health nurses are now engaged in communicable disease-control work in Montreal. With over 3,000 typhoid cases or convalescents at homes in the city, and with the usual prevalence of other communicable disease, the inadequacy of such a small force of nurses is obvious.

Our definite impression is that the city health officer of Montreal has honestly and sincerely recognized his responsibilities during the epidemic and has done his best to render efficient service under most difficult and trying circumstances. It is evident that he should be given ample authority and adequate efficient personnel at once to cope effectively with the present typhoid situation and with other serious preventable disease situations which are likely, under existing conditions, to develop in Montreal in the future. Such provision is of critical importance to all the people of the city and would be to the business interests of all the citizens and especially of those who may profit from tourist traffic. Since the epidemic began, the

city health forces have been augmented by the temporary detail of two sanitary engineers and one sanitary inspector from the provincial health department. This provincial force took charge of the milk plant and the creamery of the Montreal Dairy Co. (Ltd.) on May 21, and apparently has managed them since that date in a highly efficient manner.

When the epidemic began the Montreal Dairy Co.'s milk plant was receiving and distributing in the city from 6,000 to 8,000 gallons of milk a day. This amount has been reduced to about 2,000 gallons a day since May 21. The milk diverted from this plant is, according to our information, going in part to creameries in the surrounding country, where it is made up into cheese, and in part to other milk plants in the city. As there is yet a definite possibility of typhoid infection being derived from some of the dairy farms which formerly were supplying the Montreal Dairy Co. plant, rigid official supervision of milk from these and neighboring farms throughout its course from its sources to its consumers in Montreal or elsewhere is important. With the large number of human foci of potential typhoid infection now in Montreal, and in view of the inefficiency of precautionary measures to prevent secondary infections from existing patients and convalescents, the inadequacy of the sanitary inspection force for milk and other food establishments, and the fact that the number of new cases of typhoid fever reported for the 10 days ended June 28 averaged over 10 a day, it is obvious that, from a typhoid-fever standpoint, Montreal is not yet a comparatively safe city for visitors and is not likely to become such until much more efficient local health service is established.

It is apparent that the biggest factor in the prevention of secondary cases in the epidemic has been the hospitalization of a large number of the primary cases—about one-third of the total cases reported. The bedside prophylaxis at the hospitals generally—both the emergency hospitals for typhoid cases and the permanent hospitals—impressed us as being painstaking and efficient.

The large volume of milk, cream, butter, and cheese shipped from the general vicinity of Montreal into the United States is not now officially so controlled at its sources as to give satisfactory assurance of its freedom from typhoid or other dangerous infection at any time. To remove such menace to the health of the people of the United States, provision should be made at once for effective processing of such foods under adequate official supervision at the places to which they are shipped before they are distributed to the consumers.

CONCLUSIONS

(1) The typhoid fever epidemic in Montreal, Canada, since February 15, 1927, was beyond reasonable doubt caused by infection

distributed in the output of milk from the plant of the Montreal Dairy Co. (Ltd.) in that city.

(2) Though contributory infection may have been introduced into the milk at one or more of the four stations or within the plant in Montreal, the preponderance of evidence is that the bulk of the infection was introduced into the milk at the farm sources and was enabled to multiply before the milk reached the city plant.

(3) Though it was barely possible for a very small proportion of whatever infection was in the milk to pass through the Pasteurization machine without being heated long enough and at a high enough temperature to be destroyed, the preponderance of evidence is that a very considerable proportion of the infected milk was passed through and distributed from the plant without being subjected to Pasteurization treatment.

(4) A large proportion of the milk which at the beginning of the epidemic was distributed through the plant of the Montreal Dairy Co. (Ltd.). and which is now presumably being distributed through other plants or channels to consumers in Montreal and elsewhere, is not now being officially controlled in such manner as to preclude its possible menace to the public health.

(5) Montreal is not yet a comparatively safe city for visitors who are likely to be susceptible to typhoid-fever infection.

(6) Milk and milk products derived from sources within the general vicinity of Montreal do not appear to be produced or processed under satisfactory sanitary conditions nor under official health supervision approaching adequacy.

RECOMMENDATIONS

(1) That State and local health officials and other persons concerned be advised that Montreal is not now, from a typhoid-fever standpoint, a comparatively safe city for tourists from the United States to visit and is not likely to be such for months yet to come, unless local health service in the city of Montreal and the vicinity thereof promptly is made much more nearly adequate than it now is.

(2) That such steps as may be necessary be taken to encourage or bring about under proper official supervision radical improvement in sanitary conditions under which milk and milk products are produced, handled, or processed in the city of Montreal or at any other place in the Province of Quebec within a radius of 100 miles of the city of Montreal for export to the United States; and that such milk or milk products after reaching points to which shipped in this country and before being distributed to consumers, be Pasteurized or otherwise processed under official supervision so as to be rendered free from typhoid, tuberculosis, or any other infection likely to endanger human health.

ACKNOWLEDGMENTS

We are especially indebted for much essential assistance and many courtesies (1) to the health departments of the city of Montreal, the Province of Quebec, and the Dominion of Canada, (2) to the hospital authorities of the city of Montreal, (3) to the consul in charge of the United States consulate in Montreal, (4) to Surgeon Louis Schwartz, of the United States Public Health Service, the medical officer assigned to the United States immigration station for the medical inspection of aliens, and (5) to the many individual citizens in Montreal and the vicinity thereof whom we interviewed.

L. L. LUMSDEN, *Surgeon, Chairman.*
J. P. LEAKE, *Surgeon, Member.*
H. R. CROHURST, *Sanitary Engineer, Member.*
C. E. WALLER, *Surgeon, Recorder.*

ANOPHELES ATROPOS Dyar and Knab

A Note on Its Breeding and Other Habits

By T. H. D. GRIFFITTS, *Epidemiologist, United States Public Health Service*[1]

Dyar[2] describes *Anopheles atropos* as a "rather small blackish *Anopheles* with unspotted wings. Mesonotum elongate, deep brown. Abdomen blackish in the integument, with dark hairs, legs and palpi entirely dark, the latter with traces of paler markings at the articulations. Wing scales entirely dark, not forming spots. Little is known of this form, and nothing of the male or life history. Specimens were taken by Dr. M. J. White biting between 4 and 5 in the morning. Malaria relation unknown. Distribution: Coasts of Florida and Louisiana." Beyer[3] states that "*A. atropos* is strictly a salt water mosquito confined to a comparatively narrow belt along the Gulf coast; it is somewhat smaller than either *quadrimaculatus* or *crucians*, and almost all black in superficial appearance. Within its range it outnumbers *crucians* by three to one; *its larvæ dwell in soft mud and not in open water*" (*italics* are the writer's).

In the course of the survey, now being conducted by the United States Public Health Service, of the salt-marsh mosquito-breeding areas of the South Atlantic and Gulf States, *Anopheles atropos* has been encountered in several areas in the States of Alabama, Mississippi, and Louisiana.

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[1] From the "Survey of Salt Marsh Areas, South Atlantic and Gulf States."

[2] Dyar, Harrison G.: The Mosquitoes of the United States. No. 2447.—From the Proceedings of the United States National Museum, Vol. 62, Art. 1, pp. 1-110. (Reprinted by the U. S. Public Health Service.)

[3] Mosquitoes of Louisiana. Quarterly Bulletin, Louisiana State Board of Health, Vol. XIV, June 1, 1923, pp. 54-84.

We would add to the description of *Anopheles atropos* as follows:

1. *Color.*—Recently emerged imagoes are very dark, almost a bluish-black. Older specimens appear brownish or even reddish on the mesonotum, so much so that attention is likely to be drawn to the reddish color of the mosquito about one's person. This was especially noticeable in a great attack of them in the marsh near the Lake Borgne Lighthouse on Mississippi Sound on October 29, 1926.

2. *Resting and biting attitude.*—When observed biting in the hot sunshine this species assumes less of an angle than does *quadrimaculatus* and decidedly less than does *punctipennis* or *crucians*. In fact, they often are sprawled when about ready to finish the blood meal. On account of this characteristic one not familiar with *atropos*, or not looking for them particularly, may regard them as *Culex*, especially *C. salinarius*, owing to the color of the mesonotum as well as their near-*Culex* position.

3. *Biting habits.*—In marsh areas close to its breeding places *atropos* may be found in such numbers as to be a tormenting pest. In at least two areas we have found it at times more annoying than *Aedes sollicitans*. This held true at Lake Borgne Lighthouse, Mississippi (October 29, 1926), and at Buras, Plaquemines Parish, Louisiana (April 5, 1927). They will attack in large numbers in direct sunlight and are free biters by night. So intrepid are they in their attacks that one may pick them up between finger and thumb and place them in a container.

4. *House-entering habits.*—*Atropos* were found in large numbers in occupied rooms at the hotel at Buras, La., and in bunk cars on a siding which were occupied by laborers; they were biting severely and hundreds of engorged specimens were found in the rooms the following morning. At Biloxi, Miss., on the night of April 1, 1927, there occurred a definite flight of *atropos* to various parts of the city, specimens being taken the next morning in houses in different parts of the city. A number of them had fed during the night. The nearest breeding place was a mile, or slightly more, from the houses to which flight occurred.

5. *Breeding and larval habits.*—From our observations *A. atropos* should not be classed as a mud breeder any more than *crucians* should be so classed. However, it is a salt-water breeder. We have never taken larvae of this species from non-saline water. It seems to be strictly a salt-water breeder, and is frequently found along with *Aëdes sollicitans*, *taeniorhynchus*, and *Anopheles crucians* in water of considerable salinity. Near Bayou Labatre, Mobile County, Ala., in salt-marsh pools located on a firm, clayey marsh, the bottoms of the pools being sandy, *atropos* continually produces in a salinity of 12 per cent, the water of Mobile Bay at this point showing a salinity

of only 10 per cent (salinometer with direct salinity reading). Here is an instance of heavy production of *A. atropos* in clear salt pools, which production has been observed at all seasons of the year when the pools are filled with water. In the same marsh innumerable hoof prints wholly or partially filled with rather fouled salt water were producing freely. At Pointe aux Chênes, near Ocean Springs, Miss., they were found repeatedly under similar conditions. The marsh on which this species was producing at Buras, Plaquemines Parish, La., was a firm, alluvial, dense root-mat formation, covered with a heavy growth of salt grass (*Spartina* spp.). Here the water could scarcely be roiled or muddied. Larvae (all sizes) were present on practically every square foot of water surface. The depth of water at the time averaged about 1 inch. In brief, the preferential breeding place of *A. atropos*, as we have found it, is water of a salinity of from 3 to 12 per cent, in permanent salt pools or in shallow water on muck or alluvial marshes.

THE SCHICK TEST AND DIPHTHERIA CARRIERS IN DAIREN, MANCHURIA [1]

An increasing prevalence of diphtheria had been noted in Dairen, Manchuria, which brought the number of diphtheria patients hospitalized in that city to ten times the average number formerly recorded. This condition led to the institition of an examination of school children to detect carriers, and to the application of the Schick test, the ultimate purpose being the general administration of the toxin-antitoxin mixture. Although this latter purpose has not been achieved, a report was made on the results obtained from the search for carriers and from the application of the Schick test.

On microscopic examination of material from the pharnyx and nasal fossae of 1,559 pupils of two primary schools, in February, 1923, 13 diphtheria bacillus carriers were found—eight boys and five girls between 7 and 11 years of age. In one case the culture also proved positive. No animal tests were made.

Eight of these carriers—five boys and three girls—were given the Schick test, and only two boys, 10 and 11 years of age, respectively, proved positive, indicating that six were carriers, although possessing an immunity.

In March and May, 1923, the Schick test was given to 1,204 pupils, boys and girls, of the two primary schools noted above. The children were between 7 and 12 years of age. Of this number, 419,

[1] Abstract of Sur la prevention de la diphtherie, a note by Dr. K. Nakadate, presented by Dr. Tsurumi, Japanese delegate, at the October, 1926, session of the Committee of the International Office. Bulletin Mensuel, April, 1927.

or 34.8 per cent, gave a positive reaction. The proportion of positive reactions according to age in this group showed little variation.

There were no differences in susceptibility between the sexes.

The table below shows the results of the Schick test given to 10 diphtheria patients cared for in the isolation hospital of Dairen.

Relation between the Schick reaction and the injection of antitoxin

No.	Age	Sex	Interval between the onset of the disease and the Schick test	Day of inoculation after the injection of the antitoxin	Number of units injected	Results of the Schick test [1]	Second test 10 days later [1]
			Days				
1	15	F	11	Third day	6,000	I	I
2	3	F	8	Fifth day	4,000	I	I
3	2	M	7	Third day	4,000	I	I
4	6	M	12	Second day	5,000	I	I
5	3	F	11	do	4,000	I	I
6	5	F	12	Tenth day	4,000	II	I
7	4	M	11	Second day	5,000	II	I
8	3	F	8	Sixth day	6,000	III	III
9	4	M	3	Second day	4,000	IV	IV
10	2	M	6	Fifth day	4,000	I	I

[1] I=negative, II=doubtful, III=slowly positive.

The Schick test was negative with all the patients except Nos. 8 and 9. It was doubtful in patients Nos. 6 and 7 until 11 and 12 days, respectively, after the first appearance of the symptoms, but became negative on a second test, 10 days later, indicating that at the time of the first test an insufficient number of antibodies had been formed completely to neutralize the inoculated toxin.

In patients Nos. 8 and 9 the Schick reaction was positive, although the injection of the antitoxin had caused the disappearance of all symptoms of diphtheria. This was not considered a question of pseudoreactions, caused by a hypersensibility to the proteins of the toxin, but was believed to be due to individual hypersensibility to the toxin.

The following summary is given:

1. Among 1,559 pupils of primary schools, 13 diphtheria carriers were found, a proportion of 0.83 per 100.

2. Among 1,204 pupils Schick tested, 35 per 100 gave a positive reaction.

3. The proportion of positive reactions was practically the same in the two sexes; the morbidity rate and the susceptibility rate coincided.

4. No difference in the rate of positive reactions to the Schick test was noted in the ages 7 to 12 years.

5. In most cases the Schick test produced only a redness and a weak infiltration.

6. In some cases the reaction was negative at the end of 24 hours, then slowly became positive during the next 24 hours.

7. In two of eight carriers the Schick test was positive.

THE COST AND THE PREVENTION OF DIPHTHERIA IN LONDON [1]

A report on "The Prevention of Diphtheria," by Dr. J. Graham Forbes, has been issued by the Medical Research Council. It was originally prepared from the information of the Public Health Committee of the London County Council and is a comprehensive survey of the methods for the prevention of diphtheria which have been practiced on a large scale during the past 10 years in America, and to a much less, though growing, extent in Great Britain. The antitoxin treatment of the disease brought down the case mortality quickly from 30 to below 10 per cent, but since 1904 the decline, though continued, had only been from about 9 to about 7 per cent. During the whole time of the use of this method the attack rate and the virulence of the disease had been increasing. In London, for instance, between 1904 and 1924 the attack rate per thousand persons living rose from 11.2 to 19.1, and the deaths from 0.99 to 1.33. The cost of applying to the 620,000 children of the London schools the Schick test for diphtheria and prevention of the disease by active immunization would be $500,000, inclusive of extra medical service, which might amount to $425,000. During 1921 the cost of diphtheria alone to London taxpayers was estimated at about $2,500,000 and the cost of every case of diphtheria at about $150, a sum which would cover the cost of protecting 200 children. After analyzing the results of preventive work in Great Britain, and also for many countries abroad, the conclusion is reached that the Schick test and immunization constitute one of the most notable advances in preventive medicine. Their systematic adoption would result in a great yearly saving of child life, notably in London, where, though diphtheria has been more generally prevalent and presents a more pressing and difficult problem than in the provinces, no coordinated effort has been made to introduce immunization. The problem calls for the closest cooperation of all authorities concerned, whether public health, administrative, or educational, particularly in London, where, for diphtheria, the attack rate surpasses, and the mortality rate nearly so, that of any other city in Great Britain, and almost every other capital in Europe, if not the world.

METHOD TO ENCOURAGE EARLY DIPHTHERIA IMMUNIZATION

In order to bring about a more general use of toxin-antitoxin among young children, the Virginia State Board of Health has recently devised what appears to be an excellent plan to increase the practice of employing this prophylactic measure early. Stickers,

[1] From The Journal of the American Medical Association, July 2, 1927, p. 44.

containing the legend shown below, are being attached to the birth certificates, and in this manner the matter of diphtheria immunization is brought directly to the attention of the parents.

This method might profitably be adopted by the health authorities of other States, using the form of sticker shown below, or some similar form, in their efforts to encourage the use of toxin-antitoxin, especially among young children.

> When the Baby is SIX MONTHS OLD have your DOCTOR give TOXIN-ANTITOXIN to PREVENT DIPHTHERIA.
>
> —*United States Public Health Service*

DEATH RATES IN A GROUP OF INSURED PERSONS

Rates for Principal Causes of Death for May, 1927

The accompanying table is taken from the Statistical Bulletin for June, 1927, published by the Metropolitan Life Insurance Co., and presents the mortality experience of the industrial insurance department of the company for May, 1927, as compared with that for April and for May, 1926. The rates for this year are based on a strength of approximately 18,000,000 insured persons of the industrial populations of the United States and Canada.

The death rate for May, 1927, for this group of insured persons was 8.7 per 1,000—the lowest death rate for that month ever recorded in the experience of the company. The April rate, 9.5 per 1,000, was also the minimum recorded rate for that month in this group. Health conditions in the industrial populations of the two countries during the first five months of 1927, as interpreted by the death rate, have been better than during the corresponding period of any preceding year, and unless conditions change materially during the remainder of the year it would seem that 1927 is destined to be a record health year.

The figures for May, 1927, show a pronounced improvement over those for the corresponding month of last year, with respect both to most of the diseases of numerical importance and to those of predominant health interest because of their being subject to control. The rate for all causes combined showed a decline of nearly 6 per cent from the rate for May, 1926, and registered the usual seasonal decline as compared with the preceding month.

A notable decline in May from both the rate for April and that for May last year is shown for automobile fatalities, which dropped from

15.1 per 100,000 in 1926 to 13 in 1927, a reduction of nearly 14 per cent.

Death rates (annual basis) for principal causes per 100,000 lives exposed, May and April, 1927, and May and year, 1926

Causes of death	Rate per 100,000 lives exposed [1]			
	May, 1927	April, 1927	May, 1926	Year 1926 [2]
Total, all causes	874.8	954.1	927.1	942.7
Typhoid fever	5.2	6.7	1.8	4.2
Measles	7.5	7.5	16.8	10.2
Scarlet fever	3.5	3.8	3.5	3.4
Whooping cough	6.5	7.6	11.2	9.6
Diphtheria	10.6	9.7	8.7	9.7
Influenza	18.7	27.1	59.0	31.0
Tuberculosis (all forms)	96.4	107.2	100.2	98.7
Tuberculosis of respiratory system	81.5	95.0	87.7	86.5
Cancer	68.4	77.0	66.4	73.5
Diabetes mellitus	16.0	17.5	14.2	16.7
Cerebral hemorrhage	49.3	56.6	50.9	55.5
Organic diseases of heart	130.8	137.3	128.5	133.9
Pneumonia (all forms)	84.3	110.7	110.0	97.9
Other respiratory diseases	16.3	16.6	12.7	13.1
Diarrhea and enteritis	17.7	15.2	15.6	29.8
Bright's disease (chronic nephritis)	70.1	66.1	70.6	73.3
Puerperal state	14.7	14.7	15.4	15.3
Suicides	7.6	8.9	7.9	7.6
Homicides	7.6	6.0	6.0	7.0
Other external causes (excluding suicides and homicides)	53.6	54.8	54.4	62.2
Traumatism by automobiles	13.0	15.7	15.1	16.7
All other causes	189.8	203.2	193.3	190.4

[1] All figures include infants insured under 1 year of age.
[2] Based on provisional estimate of lives exposed to risk in 1926

COURT DECISIONS RELATING TO PUBLIC HEALTH

Milk ordinance held valid.—(Pennsylvania Supreme Court; Hoar *v.* City of Lancaster et al., 137 A. 664; decided May 9, 1927.) The plaintiff brought suit to enjoin the city of Lancaster and its officers and agents from enforcing an ordinance regulating the sale of milk in the city. The trial court granted a preliminary injunction but subsequently dissolved the same, whereupon plaintiff appealed. It was urged by plaintiff (1) that the ordinance was violative of a statute which required that all bills, except general appropriation bills, should contain only one subject, which should be expressed in the title; (2) that the city had no power to constitute its board of health a milk-inspection bureau and confer authority upon the board's officers to enforce a milk-inspection ordinance; and (3) that the ordinance was unreasonable. In holding that these objections to the ordinance could not be sustained, the supreme court said:

* * * The ordinance in question clearly comprehends but one subject, the supervision by the proper authority of the sale of milk in the city. In connection with such sales, the enactment complained of merely provides the method of enforcing the provisions necessary and incidental to supervision, as the use of the word "regulate" indicates; consequently its title is sufficient and its terms are not in this respect violative of the act of June 27, 1913.

Under the act of May 27, 1919 (P. L. 323, 337, 384), council in cities of the third class is empowered to enact ordinances to secure the health of the inhabitants, and to this end may "create any office, public board, or department which they deem necessary for the good government and interest of the city," and, possessing that authority, the city of Lancaster created a board of health for the protection of the welfare and health of the citizens of that city. In the absence of forbidding legislation we know of no more appropriate body or officer in which to lodge the power of milk inspection than this municipal subdivision. Ordinances of this type are neither unreasonable nor unusual. They have frequently been upheld by the courts of this and other jurisdictions. * * *

License tax on nonresidents held unconstitutional.—(United States District Court, W. D. Missouri, W. D.; Campbell Baking Co. *v.* City of Harrisonville, Mo., et al., 19 F. (2d) 159; decided January 4, 1927.) The city of Harrisonville, Mo., passed an ordinance which required all persons, firms, or corporations residing outside of the city and keeping no place of business therein to take out a license. The court, in a suit brought by a nonresident bakery corporation, held the said ordinance to be unconstitutional because discriminatory.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Constitutionality of Zoning Laws Upheld by Highest Court. Anon. *The Nation's Health*, volume 9, No. 1, January, 1927, pages 59–60. (Abstract by R. C. Beckett.)

The Supreme Court of the United States, in a recent decision in the case of the village of Euclid, Ohio, *v.* The Ambler Realty Company, held zoning to be a valid right of public welfare as influenced by changing social conditions. The decision in part is as follows:

"Building zone laws are of modern origin. They began in this country about 25 years ago. Until recent years urban life was comparatively simple. But with the great increase and concentration of population, problems have developed, and constantly are developing, which require, and will continue to require, additional restrictions in the respect of the use and occupation of private lands in urban communities.

"Regulations, the wisdom, necessity, and validity of which, as applied to existing conditions, are so apparent that they are now uniformly sustained, a century ago, or even half a century ago, probably would have been rejected as arbitrary and oppressive. Such regulations are sustained, under the complex conditions of our day, for reasons analagous to those which justify traffic regulations, which, before the advent of automobiles and rapid-transit street railways, would have been condemned as fatally arbitrary and unreasonable.

"And in this there is no consistency, for while the meaning of constitutional guaranties never varies, the scope of their application must expand or contract to meet the new and different conditions which are constantly coming within the field of their operation. In a changing world it is impossible that it should be otherwise."

The complaint of the Ambler Realty Co. that the establishment of residential areas would limit their property to that purpose, thus depriving them of the right of developing more valuable business areas, was held by the court to be speculative in nature and not very well founded on facts at present available.

International Health Year Book 1925. Report of the League of Nations Health Organization.—Water supplies. (Abstract by A. L. Dopmeyer.)

Bulgaria.—Of the 57 towns of population 5,000 or over, 35 possess an up-to-date water-supply system. Nineteen of these were established in 1924–25. Ninety-nine villages have an up-to-date water-supply system, 35 of which were established in 1924 and 33 in 1925.

Czechoslovakia.—Work along the line of public sanitation has been mainly in connection with the supplying of drinking water. The construction of an aqueduct is proposed to supply 42 communities with drinking water. The town of Pilsen completed the construction of a water-filtration plant. Amounts of money to be spent by various provinces for water-supply improvements are given.

Special measures against typhoid fever: In the village of Kvasitz and the town of Zlin, where severe typhoid epidemics had occurred, a special study was made of sanitary conditions, particularly the water supplies, by 14 medical students. The survey lasted 12 days, during which time 255 samples of water were submitted for analysis. Conclusions reached were that work of public sanitation was imperative and a change in the system for providing drinking water was needed.

Estonia.—Two hundred and eighty-eight out of 379 rural communities, 17 out of 19 boroughs, 11 summer resorts, and all of the towns have been surveyed. Two thousand two hundred and five chemical analyses of water were made. Physical, chemical, and bacteriological analyses of the drinking water in all railway stations were made.

Hungary.—Work in connection with water supplies in the rural areas is at a standstill, due to lack of money, but progress has been made on the supplies of the towns.

Italy.—Typhoid fever: According to statistics, this disease has remained practically stationary during recent years. A table shows that the death rate from typhoid fever varies from 17.6 per 10,000 in one locality to 2.5 in another. Active control has been established over the water supplies of communities. An endeavor is being made to popularize antityphoid vaccination.

Netherlands.—At the end of 1925, 95 out of about 100 communes were connected with the main water system in North Brabant. There are various other rural community districts planning a district water-supply system. In addition to the National Bureau for Water Supply there is a central Water Supply Commission in the Netherlands.

Union of Socialist Soviet Republics.—Investigations are now being conducted to determine the best methods of supplying villages with water.

United States of North America.—There were no outstanding developments in this field. Increased attention was given to the use of liquid chlorine, aeration, iron removal, water softening, preliminary sedimentation before coagulation, application of iodine to the public water supply, and action by States and cities against cross connections between the public supply and polluted private supplies. New drinking-water standards were adopted for controlling the quality of water on interstate carriers.

Report of a Typhoid Epidemic in Grafton, West Virginia, during the Winter of 1926–1927.—E. S. Tisdale, director, division of sanitary engineering, West Virginia State Department of Health. *Public Health Reports*, volume 42, No. 18, May 6, 1927, pages 1217–1219. (Abstract by Arthur P. Miller.)

In December, 1926, and January, 1927, Grafton, W. Va., suffered from a typhoid-fever epidemic, due to polluted drinking water. There were more than 150 cases, resulting in 25 deaths. Grafton produces its drinking water from the Tygarts Valley River, and for five years the West Virginia State Health Department has been urging filtration of the water. Little success has been

met and it even was necessary to have recourse to the courts to obtain the installation of a chlorinator.

Investigation of this epidemic disclosed that chlorination had not been continuous nor at a high enough rate during the month preceding. As to the cause of the specific pollution of the river it was found that five cases of typhoid fever had occurred, in the late fall of 1926, 20 miles up the river, and that the stools of these patients had been thrown on the banks of a small stream leading to the river. Rainfall records showed that heavy rains had occurred during the second and third weeks of November, the period preceding the time of development of the greatest number of typhoid cases in Grafton by two or three weeks. The five cases up the river were virulent ones, and the disposal of the stools on the bank of the stream leading to the river probably caused the disastrous epidemic in Grafton.

As an outcome of this epidemic immediate steps were taken to retain a competent engineer to draw plans for a modern filtration plant and the West Virginia Legislature was asked to pass a special emergency bill allowing a special levy to be made by the Grafton authorities to finance a construction program.

Does Aeration Relieve Algae Troubles?—J. E. Gibson, manager and engineer, Charleston, S. C., water department. *Water Works Engineering*, volume 80, No. 9, April 27, 1927, pages 537–538 and 558. (Abstract by W. L. Havens.)

Water Works Engineering of September 1, 1926, carried data from experiments on aeration at Charleston, S. C. The article noted above describes the results of these experiments as embodied in practical measures for an existing 10-million-gallons-per-day plant. Changes were made in the sedimentation basins so as to improve flowing-through conditions. Aeration was obtained by means of 200 Yarway involute type nozzles in 10 groups, each set in 3-inch standard soil pipe connected by vertical risers to a 24-inch header main. The present rate of operation calls for the discharge of about 20 gallons per minute from each nozzle and with a head loss of from 2½ to 3 feet. Analytical data for one month before aeration and one month after show about 50 per cent reduction in CO_2 content indicate an annual saving of $2,200 for caustic soda, and record a 107 per cent time increase for filter operation between washings. The experiments are not conclusive, however, since the installation has not gone through a summer season.

The Resistance of Different Concentrations of a Bacteriophage to Ultra-violet Rays.—Rudolph Fisher and Earl B. McKinley. *Journal of Infectious Diseases*, volume 40, No. 3, March, 1927, pages 399–403. (Abstract by C. T. Butterfield.)

Serial dilutions of bacteriophage, from 1 : 10 to 1 : 10^7, were made in beef extract broth. Portions were exposed to ultra-violet rays from standard lamp of constant amperage and at a fixed distance. Using a strain of *B. coli* and its bacteriophage, they found that the organism was more resistant to ultra-violet than was the bacteriophage. (The reports of other workers reviewed in this article indicate that the bacteriophage is usually more resistant.) The results show that the resistance of this lytic principle to ultra-violet is directly proportional to its concentration. The effect is not a photosensitization to heat. The authors state that the graphs shown resemble the destruction of cultures rather than of chemicals or enzymes.

Cities Must Serve Pure Water to Avoid Liability for Sickness.—H. J. Darcey Sanitary Engineer, State of Oklahoma. *Water Works Engineering*, volume 80 No. 9, April 27, 1927, pages 570–578. (Abstract by W. L. Havens.)

If a municipality voluntarily installs a water system from which financial profit results, the city is subject to the same conditions of liability as pertain to a private corporation. The exercise of governmental function of supplying

water does not in itself carry liability for resulting disease but negligence in the installation of its operation does. This element of negligence nullifies any plea of immunity because the warranty of purity is but implied, but the negligence must be proved. Contributory negligence, as where warning is given, may be a valid defense. The onus of responsibility on the municipality makes care and forethought the best protection from litigation. Many important court cases relating to this subject are cited in the article.

Cross Connections and Typhoid.—Anon. Bulletin of Rhode Island State Board of Health, December, 1926, page 4. (Abstract by R. E. Tarbett.)

Fourteen cases of typhoid fever with one death occurred among the employees of one particular section of a factory in Tiverton, R. I., during a period of eight months. Investigation showed that the drinking water obtained from deep wells and piped to bubblers was of safe quality, while the industrial supply was subject to pollution from the mill. These two supplies were separated except for a cross connection between the storage tanks which would permit either to be washed out with water from the others.

The infections probably followed the cleansing of the drinking-water tank. The bubblers used by those who contracted the disease were relatively close to the tank. The State has no authority to prohibit dangerous connections with public or private water supplies.

Bacterial Efficiency of Mechanical Gravity Filters.—Rao Sahib V. Govinda Raju. *The Indian Journal of Medical Research*, volume 14, No. 3, January, 1927, pages 707–712. (Abstract by R. E. Tarbett.)

The investigation was carried on to determine the bacterial efficiency of filters independent of the other devices usually associated with this type of filter.

The plants studied comprised 14 Paterson gravity-type filters, 4 Jewell gravity filters, and 6 Mather & Platt type filters, all taking water from the Ganges within a length of 15 miles. The only variable factor in so far as the raw water was concerned was the bacterial pollution. The water in every case, after a varying dosage of alum, was given a short period of sedimentation. The efficiency of the filters was determined by the *B. coli* removal. The investigation was continued through two years. The summary of results from each of the eight plants studied is given. In general, 75 per cent of the samples showed a 90 per cent removal of *B. coli*.

The writer points out that where chlorination is not depended upon the preliminary treatment devices should be so designed as to allow the water to be delivered to the filters with a bacterial content such as to allow the filters to deliver a uniformity satisfactory water.

Should Chlorine be Applied to Apparently Safe Waters?—Linn H. Enslow. *Water Works Engineering*, volume 80, No. 7, March 30, 1927, page 435. (Abstract by F. C. Dugan.)

Although chlorination of apparently safe water supplies during the major portion of time is not essential, one can not always be certain of the continued absence of danger and hazard. It is judged from the article that the author is in favor of chlorinating all water supplies, and it is believed that public health officials will agree with him.

Summary of the Purpose and Principles of Aeration of Water Supplies.—C. A. Emerson, jr., Fuller & McClintock, consulting engineers, Philadelphia. Proceedings of Eighth Texas Water Works Short School, Bulletin No. 1, pages 78–83. (Abstract by C. R. Fields.)

Aeration is defined as the "process of bringing water into intimate contact with air, in order to introduce oxygen for the oxidation of iron, manganese, or organic matter, and for washing out gases and volatile odors." A popular and

efficient type of aerator is described and the difference pointed out in the effects of aeration on ground and surface water.

International Health Year Book, 1925. Report of the League of Nations Health Organization.—Water Supplies. (Abstract by A. L. Dopmeyer.)

Germany.—A list of laws passed in connection with foodstuffs and articles in general use is given.

Hungary.—A special control has been established over the production of milk and its by-products. There is at present no definition of pure food products and producers are not required to conform to any definite standard, although a regulation is now being prepared.

Italy.—The inspection of cattle is included among the general sanitary regulations. There is a provision that whenever a case of tuberculosis is reported on a dairy farm the sick animal shall be isolated and the stable disinfected, and no animal can be admitted until it is known to be free from tuberculosis. Whenever a case of tuberculosis is reported at a dairy farm (among employees or animals), the milk can be sold only after it has been boiled under the supervision of the sanitary authorities. Certain articles of the general sanitary regulations are outlined and explanations given of what constitutes adulteration of foodstuffs.

Netherlands.—The various requirements in connection with the production, handling, sale, etc., of milk are given.

Union of Socialist Soviet Republics.—Regulations dealing with bread, milk, and meat have been recently drawn up by the Commissariat of Public Health.

The Electropure Process.—Herbert J. Bailey. Annual Report, 1927, Pennsylvania Association of Dairy and Milk Inspectors, pages 165–168. (Abstract by F. J. Moss.)

This article gives a description of the Electropure Process and its application to the heat treatment of milk. The electric heater or, as it is called, the electro-purifier, contains an oblong chamber approximately 3 by 4 inches in cross section and 32 inches high, two opposite sides being of carbon and separated from each other by sides of hard rubber. There is an electrical connection on each of the carbon sides of the box, and a 60-cycle, 220-volt current is used in heating. Milk enters the bottom of the electric chamber and acts as a conductor for the current between the sides of the box. A temperature of 160° F. is used, and the time of passage of the milk through this machine is approximately 10 seconds, An automatic temperature control regulates the temperature of the milk coming from the heater by controlling the speed of pump and, consequently, the rate of flow of milk, the electrical input to the machine being constant. Statements are made that there is no change in the flavor of the milk as it goes through the machine, and that a phenomenal bactericidal efficiency is obtained. It is said that no attempt is made to explain the action as there are different opinions regarding it, the various opinions being listed as heat alone, heat and electricity, and electrochemical action, whereas the company feels that it is a heat-plus proposition.

DEATHS DURING WEEK ENDED JULY 9, 1927

Summary of information received by telegraph from industrial insurance companies for week ended July 9, 1927, and corresponding week of 1926? (From the Weekly Health Index, July 14, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended July 9, 1927	Corresponding week 1926
Policies in force	68, 059, 895	64, 941, 243
Number of death claims	9, 353	8, 929
Death claims per 1,000 policies in force, annual rate	7. 2	7. 2

Deaths from all causes in certain large cities of the United States during the week ended July 9, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, July 14, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended July 9, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended July 9, 1927 [2]
	Total deaths	Death rate [1]		Week ended July 9, 1927	Corresponding week 1926	
Total (67 cities)	6,221	11.2	[3] 11.6	643	[3] 700	[4] 55
Akron	34			6	6	65
Albany [5]	24	10.4	11.0	1	1	21
Atlanta	81			11	17	
White	39			3	8	
Colored	42	(6)		8	9	
Baltimore [5]	187	11.9	11.9	25	24	77
White	143		10.4	19	16	73
Colored	44	(6)	20.6	6	8	93
Birmingham	72	17.5	20.3	5	15	
White	34		17.5	4	10	
Colored	38	(6)	24.5	1	5	
Boston	186	12.2	12.1	23	19	64
Bridgeport	27			1	4	19
Buffalo	248	23.5	12.8	9	22	38
Cambridge	28	11.8	7.7	3	2	53
Camden	23	9.0	10.7	5	6	86
Canton	22	10.2	9.0	3	1	71
Chicago [5]	575	9.7	10.7	72	59	62
Cincinnati	148	18.7	18.6	12	19	75
Cleveland	182	9.6	9.6	15	21	40
Columbus	69	12.4	15.7	6	5	56
Dallas	39	9.7	19.8	6	10	
White	29		18.4	4	10	
Colored	10	(6)	29.0	2	0	
Dayton	34	9.8	11.5	3	2	49
Denver	83	14.9	9.7	7	7	
Des Moines	42	14.7	10.4	5	4	84
Detroit	278	10.9	11.1	47	47	74
Duluth	21	9.5	10.6	1	4	22
El Paso	32	14.6	17.2	3	6	
Erie	19			2	5	39
Fall River [5]	28	11.0	11.9	4	6	71
Flint	25	9.1	9.2	2	3	33
Fort Worth	34	10.8	9.2	1	3	
White	28		8.9	1	3	
Colored	6	(6)	11.0	0	0	
Grand Rapids	31	10.2	9.7	4	5	59
Houston	44			8	4	
White	35			7	2	
Colored	9	(6)		1	2	
Indianapolis	85	11.9	13.1	5	9	39
White	69		12.3	3	8	27
Colored	16	(6)	19.0	2	1	122
Jersey City	59	9.6	9.3	5	14	37
Kansas City, Kans	22	9.8	18.7	6	3	117
White	15		17.3	4	1	89
Colored	7	(6)	25.4	2	2	304
Kansas City, Mo	88	12.0	13.5	9	6	
Knoxville	30	15.3		2		
White	22			2		
Colored	8	(6)		0		
Los Angeles	199			17	13	49
Louisville	77	12.5	18.4	6	13	51
White	60		15.8	6	8	58
Colored	17	(6)	33.3	0	5	0
Lowell	32	15.1	10.9	6	4	116
Lynn	12	6.0	7.5	2	3	53

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 66 cities.
[4] Data for 62 cities.
[5] Deaths for week ended Friday, July 8, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta 31, Baltimore 15, Birmingham 39, Dallas, 15 Fort Worth 14, Houston 25, Indianapolis 11, Kanasas City, Kans., 14, Knoxville 15, Louisville 17, Memphis 38, Nashville 30, New Orleans 26, and Richmond 32.

Deaths from all causes in certain large cities of the United States during the week ended July 9, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, July 14, 1927, issued by the Bureau of the Census, Department of Commerce)—**Continued.**

City	Week ended July 9, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended July 9, 1927
	Total deaths	Death rate		Week ended July 9, 1927	Corresponding week 1926	
Memphis	75	21.8	23.9	9	9	
White	39		17.8	6	3	
Colored	36	(6)	34.8	3	6	
Milwaukee	106	10.4	10.3	12	15	56
Minneapolis	67	7.9	11.3	6	8	34
Nashville [5]	44	16.6	27.8	5	7	
White	27		23.9	1	4	
Colored	17	(6)	37.4	4	3	
New Bedford	26	11.3	8.7	5	0	87
New Haven	41	11.6	12.9	7	7	98
New Orleans	140	17.2	14.9	18	9	
White	76		10.3	5	2	
Colored	64	(6)	28.2	13	7	
New York	1,184	10.3	10.1	115	134	48
Bronx Borough	147	8.3	8.4	6	14	19
Brooklyn Borough	412	9.4	8.4	51	42	53
Manhattan Borough	481	13.8	13.9	47	64	55
Queens Borough	104	6.7	6.9	7	8	30
Richmond Borough	40	14.2	15.3	4	6	74
Newark, N. J	95	10.6	9.3	11	4	54
Oakland	43	8.4	8.4	8	3	94
Oklahoma City	32			4	2	
Omaha	35	8.3	11.6	4	7	44
Paterson	24	8.7	9.1	0	3	0
Philadelphia [5]	363	9.3	11.8	30	31	48
Pittsburgh	144	11.7	9.2	19	13	66
Portland, Oreg	58			6	2	63
Providence	55	10.2	9.1	4	7	34
Richmond	53	14.4	18.5	8	15	106
White	37		11.7	4	5	81
Colored	16	(6)	35.1	4	10	152
Rochester	51	8.2	10.4	4	7	34
St. Louis	174	10.8	13.6	5	17	
St. Paul	51	10.6	14.3	1	3	9
Salt Lake City [5]	32	12.3	14.9	3	4	46
San Antonio	38	9.4	14.2	9	14	
San Diego	37	16.8	16.1	3	2	64
San Francisco	157	14.2	12.0	9	7	56
Schenectady	19	10.7	4.5	3	2	90
Seattle	88			5	3	52
Somerville	10	5.1	8.3	1	1	36
Spokane	27	12.9	15.3	2	2	50
Springfield, Mass	26	9.2	13.3	1	5	15
Syracuse	41	10.9	10.4	4	4	51
Tacoma	24	11.7	9.8	1	1	24
Toledo	66	11.3	10.8	6	4	58
Trenton	23	8.8	13.2	4	2	70
Utica	22	11.1	18.7	2	2	46
Waterbury	10			2	1	47
Wilmington, Del	26	10.8	12.6	1	1	25
Worcester	36	9.6	11.1	7	2	84
Yonkers	25	11.0	9.9	0	1	0
Youngstown	25	7.7	12.0	7	4	98

[5] Deaths for week ended Friday, July 8, 1927.

[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta 31, Baltimore 15, Birmingham 39, Dallas 15, Fort Worth 14, Houston 25, Indianapolis 11, Kansas City, Kans., 14, Knoxville 15, Louisville 17, Memphis 38, Nashville 30, New Orleans 26, and Richmond 32.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended July 16, 1927

DIPHTHERIA

	Cases
Alabama	14
Arizona	2
Arkansas	4
California	78
Colorado	12
Connecticut	22
Florida	5
Georgia	10
Illinois	65
Indiana	12
Iowa [1]	17
Kansas	11
Louisiana	13
Maine	3
Maryland [1]	36
Massachusetts	75
Michigan	73
Minnesota	14
Mississippi	9
Montana	3
Nebraska	8
New Jersey	75
New Mexico	4
New York [2]	47
North Carolina	15
Oklahoma [3]	3
Oregon	10
Pennsylvania	166
Rhode Island	6
South Carolina	7
South Dakota	3
Tennessee	6
Texas	14
Utah [1]	7
Washington	14
West Virginia	6
Wisconsin	30

[1] Week ended Friday.

[2] Exclusive of New York City.

INFLUENZA

	Cases
Alabama	11
Arkansas	3
California	10
Florida	2
Georgia	12
Illinois	13
Kansas	7
Louisiana	5
Maine	2
Massachusetts	1
Minnesota	1
New Jersey	1
Oklahoma [3]	11
Oregon	6
South Carolina	96
Tennessee	6
Texas	26
Utah [1]	2
West Virginia	1
Wisconsin	10

MEASLES

Alabama	30
Arizona	20
Arkansas	22
California	127
Colorado	23
Connecticut	41
Delaware	5
Florida	20
Georgia	15
Idaho	3
Illinois	104
Indiana	30
Iowa [1]	9
Kansas	79
Louisiana	18

[3] Exclusive of Oklahoma City and Tulsa.

MEASLES—continued

	Cases
Maine	28
Maryland [1]	19
Massachusetts	818
Michigan	105
Minnesota	42
Montana	5
Nebraska	5
New Jersey	18
New York [2]	309
North Carolina	328
Oregon	60
Pennsylvania	371
Rhode Island	1
South Carolina	112
South Dakota	5
Tennessee	7
Texas	11
Utah [1]	3
Vermont	11
Washington	178
West Virginia	38
Wisconsin	214
Wyoming	7

MENINGOCOCCUS MENINGITIS

California	1
Connecticut	2
Florida	2
Illinois	6
Maryland [1]	2
Massachusetts	1
Michigan	1
Minnesota	1
Montana	1
New York [2]	2
North Carolina	1
Oregon	2
Texas	1
Washington	1
Wisconsin	8

POLIOMYELITIS

Arizona	3
Arkansas	2
California	48
Connecticut	3
Florida	2
Illinois	5
Kansas	3
Louisiana	6
Massachusetts	4
Mississippi	1
New Jersey	2
New Mexico	11
New York [2]	3
Oklahoma [3]	1
Pennsylvania	2
Texas	4
Utah [1]	1
Washington	1

SCARLET FEVER

	Cases
Alabama	3
Arizona	10
Arkansas	6
California	57
Colorado	39
Connecticut	18
Delaware	1
Florida	4
Georgia	3
Idaho	1
Illinois	96
Indiana	24
Iowa [1]	16
Kansas	32
Louisiana	4
Maine	18
Maryland [1]	14
Massachusetts	147
Michigan	115
Minnesota	64
Mississippi	13
Montana	7
Nebraska	8
New Jersey	64
New Mexico	6
New York [2]	119
North Carolina	10
Oklahoma [3]	16
Oregon	7
Pennsylvania	220
Rhode Island	9
South Carolina	1
South Dakota	14
Tennessee	18
Texas	12
Utah [1]	8
Vermont	1
Washington	14
West Virginia	24
Wisconsin	64
Wyoming	4

SMALLPOX

Alabama	10
Arizona	1
California	19
Florida	4
Georgia	6
Idaho	15
Illinois	15
Indiana	58
Iowa [1]	19
Kansas	19
Louisiana	11
Michigan	35
Minnesota	1
Mississippi	1
Montana	5
Nebraska	6
New Mexico	14
New York [2]	6
North Carolina	11
Oklahoma [3]	36
Oregon	13
Pennsylvania	5
South Carolina	1

[1] Week ended Friday.
[2] Exclusive of New York City
[3] Exclusive of Oklahoma City and Tulsa.

SMALLPOX—continued	Cases
South Dakota	8
Tennessee	4
Texas	4
Utah [1]	3
Washington	21
West Virginia	19
Wisconsin	13

TYPHOID FEVER	Cases
Alabama	90
Arizona	1
Arkansas	34
California	20
Colorado	10
Connecticut	3
Delaware	1
Florida	16
Georgia	96
Illinois	29
Indiana	7
Iowa [1]	4
Kansas	20
Louisiana	27

TYPHOID FEVER—continued	Cases
Maine	2
Maryland [1]	12
Massachusetts	8
Michigan	12
Minnesota	3
Mississippi	59
Montana	3
Nebraska	5
New Jersey	11
New Mexico	5
New York [2]	5
North Carolina	63
Oklahoma [3]	74
Oregon	5
Pennsylvania	16
South Carolina	123
Tennessee	169
Texas	10
Utah [1]	2
Vermont	3
Washington	1
West Virginia	11
Wisconsin	3

[1] Week ended Friday.
[2] Exclusive of New York City.
[3] Exclusive of Oklahoma City and Tulsa.

Reports for Week Ended July 9, 1927

DIPHTHERIA	Cases
District of Columbia	5
North Dakota	4
Rhode Island	10

MEASLES	Cases
District of Columbia	7
North Dakota	6
Rhode Island	2

SCARLET FEVER	Cases
District of Columbia	11
North Dakota	16
Rhode Island	25

SMALLPOX	Cases
District of Columbia	9

TYPHOID FEVER	Cases
District of Columbia	1
Rhode Island	3

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Cerebrospinal meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
March, 1927										
New Hampshire		13	2					61	0	2
April, 1927										
Georgia	5	46	989	172	871	38	0	62	227	45
New Hampshire		11	101					66	0	2
May, 1927										
Georgia		32	274	106	492	54	1	50	93	105
New Hampshire	1	6	220					36	0	2
Pennsylvania	0	729			2,962	4	2	2,027	1	77
June, 1927										
Georgia	2	32	93	168	246	59	1	42	56	234
Massachusetts	8	388	16	1	1,734	1	11	1,587	0	18
Michigan		334	17	2	909		8	921	151	29
Vermont		4			335		0	30	0	1

April, 1927

	Cases
Georgia:	
Chicken pox	236
Dysentery	65
German measles	17
Hookworm disease	13
Lethargic encephalitis	2
Mumps	251
Paratyphoid fever	4
Septic sore throat	32
Whooping cough	260

May, 1927

	Cases
Anthrax:	
Pennsylvania	2
Chicken pox:	
Georgia	106
Pennsylvania	1,921
Dengue:	
Georgia	28
Dysentery:	
Georgia	143
German measles:	
Pennsylvania	634
Hookworm disease:	
Georgia	7
Impetigo contagiosa:	
Pennsylvania	30
Lead poisoning:	
Pennsylvania	1
Lethargic encephalitis:	
Pennsylvania	6
Mumps:	
Georgia	65
Pennsylvania	1,926
Ophthalmia neonatorum:	
Pennsylvania	8
Puerperal fever:	
Pennsylvania	8
Rabies in man:	
Pennsylvania	2
Scabies:	
Pennsylvania	20
Septic sore throat:	
Georgia	29
Tetanus:	
Pennsylvania	5
Trachoma:	
Georgia	2
Pennsylvania	3

May, 1927—Continued

	Cases
Whooping cough:	
Georgia	180
Pennsylvania	813

June, 1927

	Cases
Chicken pox:	
Georgia	40
Massachusetts	874
Michigan	820
Vermont	107
Conjunctivitis:	
Georgia	2
Dengue:	
Georgia	5
Dysentery:	
Georgia	131
German measles:	
Massachusetts	79
Hookworm disease:	
Georgia	23
Lead poisoning:	
Massachusetts	7
Lethargic encephalitis:	
Massachusetts	3
Michigan	8
Mumps:	
Georgia	83
Massachusetts	1,044
Michigan	927
Vermont	141
Ophthalmia neonatorum:	
Massachusetts	168
Rabies in animals:	
Vermont	3
Septic sore throat:	
Georgia	14
Massachusetts	7
Michigan	3
Tetanus:	
Massachusetts	4
Trachoma:	
Massachusetts	6
Typhus fever:	
Georgia	1
Whooping cough:	
Georgia	135
Massachusetts	406
Michigan	613
Vermont	125

PLAGUE IN CONTRA COSTA COUNTY, CALIF.

A death from bubonic plague occurred at Clayton, Contra Costa County, Calif., July 8, 1927. The diagnosis was confirmed July 16 after inoculation of a guinea pig. The patient was a child five years old. The family trapped squirrels for food. Five thousand ground squirrels from Contra Costa County have been examined for plague infection during the last two months, and all were found negative. An intensive survey is being made in the vicinity where the case of plague occurred, and squirrels are to be examined at the State hygienic laboratory. Poisoning operations are now in progress.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 96 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,440,000. The estimated population of the 91 cities reporting deaths is more than 29,800,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended July 2, 1927, and July 3, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
41 States	1,259	1,072	
96 cities	831	709	677
Measles:			
40 States	4,671	9,051	
96 cities	1,613	2,682	
Poliomyelitis:			
41 States	45	27	
Scarlet fever:			
41 States	2,029	2,156	
96 cities	758	987	504
Smallpox:			
41 States	426	457	
96 cities	76	53	62
Typhoid fever:			
41 States	642	535	
96 cities	88	95	108
Deaths reported			
Influenza and pneumonia:			
91 cities	434	452	
Smallpox			
91 cities	0	0	

City reports for week ended July 2, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics, or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	0	1	0	0	0	0	1	1
New Hampshire:									
Concord	22,546	0	0	0	0	0	3	0	1
Vermont:									
Barre	10,008	0	0	0	0	0	0	0	0
Burlington	24,089	1	0	1	0	0	4	[illegible]	0

City reports for week ended July 2, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND—contd.									
Massachusetts.									
Boston	779,620	33	44	23	0	0	116	19	14
Fall River	128,993	3	3	3	1	1	6	0	1
Springfield	142,065	2	2	2	0	0	2	1	1
Worcester	190,757	5	3	1	0	0	1	0	1
Rhode Island.									
Pawtucket	69,760	0	1	0	0	0	0	0	1
Providence	267,918	0	5	1	0	0	0	0	0
Connecticut.									
Bridgeport	(1)	0	3	2	0	0	0	0	2
Hartford	160,197	0	3	6	0	0	2	6	1
New Haven	178,927	10	1	0	0	1	17	0	3
MIDDLE ATLANTIC									
New York.									
Buffalo	538,016	25	8	9	-------	1	11	3	14
New York	5,873,356	144	194	297	24	2	73	110	67
Rochester	316,786	5	7	6	-------	0	4	8	4
Syracuse	182,003	25	4	0	-------	0	140	3	0
New Jersey:									
Camden	128,642	0	4	6	0	0	1	2	0
Newark	452,513	90	11	12	0	0	4	45	5
Trenton	132,020	1	3	1	0	0	0	0	0
Pennsylvania									
Philadelphia	1,979,364	64	52	70	-------	1	44	61	35
Pittsburgh	631,563	30	14	27	-------	1	70	11	18
Reading	112,707	1	2	2	-------	0	60	9	1
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	4	6	4	0	1	4	5	9
Cleveland	936,485	43	18	35	0	1	3	66	11
Columbus	279,836	0	2	4	0	0	0	0	4
Toledo	287,380	48	4	4	1	1	21	2	6
Indiana:									
Fort Wayne	97,846	4	2	3	0	0	2	0	1
Indianapolis	358,819	-------	3	-------	-------	-------	-------	-------	-------
South Bend	80,091	2	1	0	0	0	0	0	1
Terre Haute	71,071	0	0	0	0	0	0	0	0
Illinois:									
Chicago	2,995,239	72	68	81	0	0	64	74	57
Springfield	63,923	5	0	2	1	1	0	0	0
Michigan:									
Detroit	1,245,824	35	38	37	2	1	7	18	14
Flint	130,316	7	2	0	0	0	19	0	1
Grand Rapids	153,698	2	2	1	0	0	21	0	3
Wisconsin									
Kenosha	50,891	2	0	0	0	0	2	8	0
Madison	46,385	19	0	0	0	0	1	0	1
Milwaukee	509,192	57	11	9	0	0	185	37	8
Racine	67,707	7	0	2	0	0	0	1	3
Superior	39,671	0	0	0	0	0	0	0	1
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	7	0	0	0	0	4	0	2
Minneapolis	425,435	115	11	12	0	0	1	0	14
St. Paul	246,001	18	11	0	0	0	9	1	6
Iowa.									
Davenport	52,469	0	0	0	0	-------	0	3	-------
Des Moines	141,441	0	1	0	0	-------	0	0	-------
Sioux City	76,411	3	0	0	0	-------	6	1	-------
Waterloo	36,771	3	0	0	0	-------	2	1	-------
Missouri:									
Kansas City	367,481	4	3	3	0	0	17	6	8
St. Joseph	78,342	0	1	0	0	0	7	0	1
St. Louis	821,543	8	25	11	0	0	24	82	-------

[1] No estimate made.

City reports for week ended July 2, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
WEST NORTH CENTRAL—continued									
North Dakota:									
Fargo	26,403	1	0	0	0	0	0	0	0
Grand Forks	14,811	1	0	0	0		2	0	
South Dakota:									
Aberdeen	15,036	1	0	0	0		0	2	
Sioux Falls	30,127	0	0	0	0		34	0	
Nebraska:									
Lincoln	60,941	6	0	0	0	0	8	9	0
Omaha	211,768	3	2	2	0	0	8	4	2
Kansas:									
Topeka	55,411	3	1	0	1	1	21	5	1
Wichita	88,367	4	0	2	0	0	4	0	3
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	7	1	1	0	0	0	0	1
Maryland:									
Baltimore	796,296	35	12	54	1	2	14	1	10
Cumberland	33,741	0	0	0	0	0	0	0	0
Frederick	12,035	0	0	1	0	0	0	0	0
District of Columbia:									
Washington	497,906	4	0	11	0	0	2	0	4
Virginia:									
Lynchburg	30,395	2	0	1	0	0	3	3	2
Norfolk	(1)	1	0	0	0	0	11	1	0
Richmond	186,403	0	1	5	0	0	45	1	0
Roanoke	58,208	0	0	0	0	0	2	0	0
West Virginia:									
Charleston	49,019	0	0	0	1	1	3	0	3
Wheeling	56,208	0	0	0	0	0	2	0	2
North Carolina:									
Raleigh	30,371	0	0	0	0	0	22	0	0
Wilmington	37,061	0	0	0	0	0	25	0	1
Winston-Salem	69,031	3	0	2	0	0	56	8	3
South Carolina:									
Charleston	73,125	0	0	0	4	0	1	0	2
Columbia	41,225	2	0	0	0		39	0	2
Greenville	27,311	0	0	0	0	0	1	1	0
Georgia:									
Atlanta	(1)	0	1	2	4	0	3	1	2
Brunswick	16,809	0	0	0	0	0	0	3	0
Savannah	93,134	0	1	0	2	0	14	2	0
Florida:									
Miami	69,754	0	1	0	0	0	0	1	1
St. Petersburg	26,847		0			0			1
Tampa	94,743	0	0	2	0	0	4	0	1
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	1	0	0	0	0	0	1
Louisville	305,935	1	2	1	1	0	0	2	8
Tennessee:									
Memphis	174,533	0	1	0	0	0	9	0	4
Nashville	136,220	1	0	0	0	0	0	0	3
Alabama:									
Birmingham	205,670	0	1	3	3	0	7	2	8
Mobile	65,955	0	0	0	0	0	0	0	0
Montgomery	46,481	0	0	0	0	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643		0						
Little Rock	74,216	2	0	0	0	0	5	0	1
Louisiana:									
New Orleans	414,493	0	5	13	0	0	11	0	3
Shreveport	57,857	1	0	0	0	0	3	1	1
Oklahoma:									
Oklahoma City	(1)	1	0	0	0	0	3	0	2

[1] No estimate made.

City reports for week ended July 2, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria: Cases, estimated expectancy	Diphtheria: Cases reported	Influenza: Cases reported	Influenza: Deaths reported	Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
WEST SOUTH CENTRAL—continued									
Texas:									
Dallas	194,450	0	2	3	0	1	15	0	5
Galveston	48,375	0	0	1	0	0	0	0	0
Houston	164,954	0	1	7	0	0	1	0	3
San Antonio	198,069	0	1	5	0	0	0	0	4
MOUNTAIN									
Montana:									
Billings	17,971	1	0	0	0	0	0	0	0
Great Falls	29,883	0	0	0	0	0	13	0	0
Helena	12,037	-------	0	-------	-------	-------	-------	-------	-------
Missoula	12,668	0	0	0	0	0	4	0	0
Idaho:									
Boise	23,042	4	1	0	0	0	1	0	0
Colorado:									
Denver	280,911	16	9	12	-------	1	24	2	3
Pueblo	43,787	0	1	0	0	0	11	0	3
New Mexico:									
Albuquerque	21,000	1	1	0	1	0	0	0	0
Utah:									
Salt Lake City	130,948	25	3	2	0	0	2	1	4
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	(1)	9	4	3	0	-------	219	8	-------
Spokane	108,897	12	1	0	0	-------	2	0	-------
Tacoma	104,455	3	2	1	0	0	20	0	2
California:									
Los Angeles	(1)	28	35	19	6	0	34	9	17
Sacramento	72,260	11	2	0	0	0	1	1	0
San Francisco	557,530	25	15	6	0	1	20	20	1

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
NEW ENGLAND											
Maine:											
Portland	1	2	0	0	0	0	1	1	0	3	12
New Hampshire:											
Concord	0	1	0	0	0	0	0	0	0	0	10
Vermont:											
Barre	0	0	0	0	0	0	0	0	0	0	1
Burlington	0	5	0	0	0	0	0	0	0	1	-------
Massachusetts:											
Boston	29	55	0	0	0	13	2	0	0	27	178
Fall River	1	6	0	0	0	1	1	0	0	0	21
Springfield	3	2	0	0	0	1	0	0	0	3	25
Worcester	4	14	0	0	0	2	0	0	0	3	41
Rhode Island:											
Pawtucket	0	1	0	0	0	0	0	0	0	0	8
Providence	4	8	0	0	0	5	1	0	0	2	48
Connecticut:											
Bridgeport	4	1	0	0	0	1	0	0	0	0	27
Hartford	2	4	0	0	0	2	0	2	0	7	-------
New Haven	2	1	0	0	0	1	1	0	0	0	37

[1] No estimate made.

City reports for week ended July 9, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
MIDDLE ATLANTIC											
New York:											
Buffalo	13	9	0	0	0	8	0	0	0	11	113
New York	85	191	0	0	0	[1] 96	17	10	1	114	1,172
Rochester	8	5	0	0	0	3	0	0	0	3	76
Syracuse	4	1	0	0	0	1	1	0	0	2	40
New Jersey:											
Camden	2	3	0	0	0	3	0	0	0	2	28
Newark	11	15	0	0	0	4	1	1	0	65	86
Trenton	2	0	0	0	0	5	0	0	0	2	22
Pennsylvania:											
Philadelphia	43	63	1	0	0	33	5	1	0	31	424
Pittsburgh	16	13	1	0	0	7	1	0	0	19	--------
Reading	1	1	0	0	0	1	0	0	0	1	31
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	6	18	1	3	0	15	2	1	0	3	142
Cleveland	16	19	1	0	0	9	2	2	0	36	170
Columbus	3	3	1	0	0	5	0	0	0	16	86
Toledo	7	4	1	0	0	7	1	0	0	15	86
Indiana:											
Fort Wayne	1	1	1	0	0	1	0	0	0	4	28
Indianapolis	3	--------	4	--------	--------	--------	1	--------	--------	--------	--------
South Bend	1	1	0	0	0	0	0	0	0	0	10
Terre Haute	1	0	0	0	0	2	0	0	0	1	22
Illinois:											
Chicago	51	73	1	0	0	45	4	2	0	102	655
Springfield	1	2	0	1	0	0	0	1	0	0	10
Michigan:											
Detroit	40	40	4	0	0	29	3	1	1	45	316
Flint	2	9	0	0	0	1	1	0	0	0	21
Grand Rapids	3	5	0	1	0	2	1	0	0	11	32
Wisconsin:											
Kenosha	1	1	1	0	0	0	0	0	0	0	6
Madison	0	1	0	0	0	0	0	1	0	23	8
Milwaukee	14	15	1	0	0	11	1	0	0	25	124
Racine	2	1	1	0	0	1	0	0	0	9	11
Superior	1	4	2	0	0	2	0	0	0	0	18
WEST NORTH CENTRAL											
Minnesota:											
Duluth	3	4	1	0	0	2	0	0	0	3	22
Minneapolis	15	21	4	1	0	3	1	0	0	0	97
St. Paul	10	4	2	0	0	7	0	0	0	2	62
Iowa:											
Davenport	1	0	1	0	--------	--------	0	0	--------	0	--------
Des Moines	2	5	2	2	--------	--------	0	0	--------	0	8
Sioux City	1	1	1	2	--------	--------	0	0	--------	9	--------
Waterloo	1	0	1	0	--------	--------	0	0	--------	0	--------
Missouri:											
Kansas City	2	1	0	1	0	6	1	2	1	23	86
St. Joseph	0	1	0	12	0	0	0	0	0	0	14
St. Louis	12	9	1	1	0	14	4	2	1	46	238
North Dakota:											
Fargo	0	3	0	0	0	0	0	0	0	0	6
Grand Forks	0	1	0	0	--------	--------	0	0	--------	0	--------
South Dakota:											
Aberdeen	1	0	0	0	--------	--------	0	0	--------	0	--------
Sioux Falls	1	1	0	0	--------	--------	0	0	--------	0	--------
Nebraska:											
Lincoln	0	3	1	0	0	1	0	1	0	3	13
Omaha	2	1	4	1	0	2	0	0	0	2	48
Kansas:											
Topeka	0	0	0	1	0	0	1	0	0	29	14
Wichita	1	0	3	0	0	0	0	0	0	20	33

[1] Pulmonary tuberculosis only.

City reports for week ended July 2, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
SOUTH ATLANTIC											
Delaware:											
Wilmington	2	3	0	0	0	0	1	0	0	1	33
Maryland:											
Baltimore	11	7	0	0	0	20	4	0	0	78	202
Cumberland	0	0	0	0	0	0	0	0	0	0	9
Frederick	0	3	0	0	0	0	0	1	0	0	2
District of Col.:											
Washington	8	16	0	6	0	9	3	0	0	12	100
Virginia:											
Lynchburg	0	0	0	0	0	0	0	0	0	2	22
Norfolk	0	1	1	0	0	1	2	0	0	6	--------
Richmond	1	1	0	0	0	2	1	2	0	23	52
Roanoke	0	0	1	4	0	0	0	0	0	2	14
West Virginia:											
Charleston	1	3	0	0	0	0	1	0	1	3	21
Wheeling	1	1	0	0	0	2	0	0	0	2	22
North Carolina:											
Raleigh	0	1	0	0	0	2	0	1	0	8	15
Wilmington	0	0	0	0	0	0	0	0	0	4	10
Winston-Salem	0	0	1	0	0	0	1	1	0	19	28
South Carolina:											
Charleston	0	0	0	0	0	3	2	0	0	1	18
Columbia	0	0	0	0	--------	--------	1	3	--------	11	13
Greenville	0	0	0	0	0	1	1	0	0	5	6
Georgia:											
Atlanta	2	6	3	0	0	3	3	1	1	2	66
Brunswick	0	0	0	0	0	1	0	2	0	0	3
Savannah	0	1	0	0	0	1	1	1	0	0	22
Florida:											
Miami	0	0	--------	0	0	0	1	0	0	5	31
St. Petersburg	0	--------	0	--------	0	1	0	--------	0	--------	9
Tampa	0	2	0	0	0	0	1	0	0	0	24
EAST SOUTH CENTRAL											
Kentucky:											
Covington	1	0	0	0	0	1	0	0	0	0	22
Louisville	2	2	0	2	0	6	3	2	0	8	81
Tennessee:											
Memphis	1	7	1	0	0	4	4	8	2	11	63
Nashville	1	0	0	0	0	3	4	5	2	5	57
Alabama:											
Birmingham	1	2	2	2	0	5	3	10	1	3	55
Mobile	0	0	1	0	0	0	1	0	0	0	23
Montgomery	0	0	0	3	0	0	1	1	0	2	--------
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	0	--------	0	--------	--------	--------	0	--------	--------	--------	--------
Little Rock	0	0	0	0	0	3	1	1	0	3	--------
Louisiana:											
New Orleans	2	1	1	2	0	15	4	9	2	10	154
Shreveport	1	0	0	0	0	1	0	0	0	1	26
Oklahoma:											
Oklahoma City	0	1	2	0	0	0	1	1	0	0	28
Texas:											
Dallas	1	1	0	0	0	1	2	3	0	12	52
Galveston	0	0	0	0	0	1	0	4	0	0	14
Houston	1	2	1	1	0	2	3	1	0	3	64
San Antonio	1	0	1	0	0	7	2	0	1	0	61
MOUNTAIN											
Montana:											
Billings	0	0	1	0	0	0	0	0	0	6	1
Great Falls	1	2	1	0	0	0	0	0	0	0	8
Helena	0	--------	0	--------	--------	--------	0	--------	--------	--------	--------
Missoula	0	0	0	0	0	0	0	0	0	0	7
Idaho:											
Boise	0	0	0	0	0	0	0	0	0	0	5

City reports for week ended July 2, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
MOUNTAIN—con.											
Colorado.											
Denver	7	17	0	1	0	11	0	1	0	2	70
Pueblo	1	10	1	0	0	0	0	0	0	0	14
New Mexico:											
Albuquerque	0	1	0	0	0	2	0	0	0	0	12
Utah											
Salt Lake City	2	3	0	6	0	0	0	0	0	19	42
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	1
PACIFIC											
Washington.											
Seattle	6	3	4	0			0	1		19	
Spokane	3	7	3	13			1	2		0	
Tacoma	1	1	2	14	0	2	0	0	0	0	25
California:											
Los Angeles	14	17	3	1	0	19	4	0	1	15	238
Sacramento	1	2	0	0	0	1	1	3	0	0	19
San Francisco	7	3	1	0	0	19	1	0	0	18	162

Division, State, and city	Cerebrospinal meningitis: Cases	Cerebrospinal meningitis: Deaths	Lethargic encephalitis: Cases	Lethargic encephalitis: Deaths	Pellagra: Cases	Pellagra: Deaths	Poliomyelitis (infantile paralysis): Cases, estimated expectancy	Poliomyelitis (infantile paralysis): Cases	Poliomyelitis (infantile paralysis): Deaths
NEW ENGLAND									
Massachusetts:									
Boston	0	0	1	0	0	0	1	2	1
MIDDLE ATLANTIC									
New York:									
New York	2	1	6	2	0	0	2	3	1
New Jersey									
Camden	0	0	1	1	0	0	0	0	0
Pennsylvania:									
Philadelphia	1	2	1	0	0	1	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	0	1	0	0	0	0	0	0	0
Illinois:									
Chicago	6	2	1	0	2	3	0	1	1
Michigan:									
Detroit	1	1	1	3	0	0	0	0	0
Flint	0	0	1	0	0	0	0	0	0
Wisconsin:									
Milwaukee	4	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	1	0	0	1	0	0	0	0	0
Missouri:									
St. Louis	1	0	0	0	0	0	0	0	0
Kansas:									
Wichita	2	0	0	0	0	0	0	0	0

City reports for week ended July 2, 1927—Continued

Division, State, and city	Cerebrospinal meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
SOUTH ATLANTIC									
Maryland:									
Baltimore	0	0	0	2	0	0	1	0	0
North Carolina:									
Wilmington	0	0	0	0	0	1	0	0	0
Winston-Salem	0	0	0	0	0	1	0	0	0
South Carolina:									
Charleston	0	0	0	0	1	0	0	0	0
Georgia:									
Atlanta	0	0	0	0	2	1	0	1	0
Savannah	0	0	0	0	2	1	0	0	0
Florida:									
Miami	0	0	0	0	1	0	0	0	0
EAST SOUTH CENTRAL									
Tennessee:									
Memphis	0	0	0	0	1	2	0	0	0
Alabama:									
Birmingham	1	0	0	0	0	0	0	0	0
WEST SOUTH CENTRAL									
Louisiana:									
New Orleans	0	0	0	0	1	1	1	2	0
Shreveport	0	0	0	0	0	4	0	0	0
Oklahoma:									
Oklahoma City	0	0	0	1	0	0	0	0	0
Texas:									
Dallas [1]	0	0	0	0	2	2	1	0	0
MOUNTAIN									
Montana:									
Billings	1	0	0	0	0	0	0	0	0
Great Falls	1	1	0	0	0	0	0	0	0
PACIFIC									
California:									
Los Angeles	1	0	0	0	0	0	1	3	1
Sacramento	0	1	0	0	0	0	0	0	0
San Francisco	1	1	0	1	0	0	0	2	1

[1] Dengue: 1 case at Dallas, Tex.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended July 2, 1927, compared with those for a like period ended July 3, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, May 29 to July 2, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927
101 cities	117	158	136	[2] 162	113	151	130	162	[3] 122	[4] 142
New England	78	160	68	132	78	118	59	116	64	88
Middle Atlantic	135	235	156	248	125	217	152	270	164	212
East North Central	119	124	146	126	131	142	162	132	117	[5] 125
West North Central	210	81	234	81	169	79	192	46	125	60
South Atlantic	47	127	60	[2] 124	67	118	45	107	82	143
East South Central	16	61	26	20	16	41	10	36	[3] 22	[6] 21
West South Central	56	67	47	46	43	55	43	67	47	[7] 125
Mountain	109	180	128	369	146	207	118	153	155	[8] 129
Pacific	131	128	158	126	102	115	131	113	129	76

MEASLES CASE RATES

	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927
101 cities	1,005	448	930	[2] 426	749	361	619	302	[3] 461	[4] 276
New England	726	313	658	457	493	406	425	327	318	341
Middle Atlantic	752	282	708	290	586	281	477	247	314	201
East North Central	1,067	324	1,026	296	1,003	261	838	214	739	[5] 215
West North Central	2,231	461	2,051	373	1,264	248	942	216	605	204
South Atlantic	1,203	1,005	1,093	[2] 851	818	694	695	531	432	447
East South Central	1,655	382	1,391	158	693	132	610	132	[3] 428	[6] 85
West South Central	86	503	125	424	77	268	95	130	52	[7] 151
Mountain	1,249	620	921	566	702	342	793	450	437	[8] 505
Pacific	691	1,097	589	1,139	507	971	482	843	458	775

SCARLET FEVER CASE RATES

	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927
101 cities	230	220	260	[2] 241	233	198	212	190	[3] 170	[4] 130
New England	248	288	255	323	203	265	236	237	186	221
Middle Atlantic	209	256	195	287	222	224	210	223	188	149
East North Central	245	212	333	247	273	216	251	209	187	[5] 135
West North Central	419	236	627	195	484	163	357	159	270	89
South Atlantic	188	78	158	[2] 110	130	82	151	96	65	82
East South Central	124	102	78	66	47	71	47	82	[3] 66	[6] 59
West South Central	163	21	86	34	69	8	30	38	60	[7] 17
Mountain	219	782	118	719	128	665	118	441	91	[8] 294
Pacific	169	186	236	204	214	181	158	139	150	86

SMALLPOX CASE RATES

	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927
101 cities	15	22	16	[2] 20	11	19	16	16	[3] 11	[4] 13
New England	0	0	0	0	0	0	0	0	0	0
Middle Atlantic	0	0	0	0	0	0	0	0	2	0
East North Central	9	33	12	21	10	21	14	12	10	[5] 4
West North Central	40	24	28	32	32	30	44	58	26	38
South Atlantic	34	33	37	[2] 20	30	36	26	29	11	18
East South Central	83	92	52	107	10	56	88	56	[3] 38	[6] 21
West South Central	43	17	34	8	26	13	17	13	21	[7] 13
Mountain	27	36	46	27	27	54	18	90	55	[8] 64
Pacific	24	60	54	92	24	65	32	21	19	73

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.
[2] Greenville, S. C., not included.
[3] Covington, Ky., not included.
[4] Indianapolis, Ind., Montgomery, Ala., Fort Smith, Ark., and Helena, Mont., not included.
[5] Indianapolis, Ind., not included.
[6] Montgomery, Ala., not included.
[7] Fort Smith, Ark., not included.
[8] Helena, Mont., not included.

Summary of weekly reports from cities, May 29 to July 2, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927
101 cities	9	13	12	[2] 11	11	13	12	11	[3] 16	[4] 15
New England	0	9	17	5	19	12	9	2	12	7
Middle Atlantic	9	5	6	6	9	6	10	4	11	6
East North Central	5	7	4	7	3	8	4	6	5	[5] 5
West North Central	8	12	6	14	10	6	4	6	10	8
South Atlantic	32	29	26	[2] 18	28	27	30	40	35	22
East South Central	10	61	57	41	21	82	36	61	[3] 126	[6] 184
West South Central	9	38	52	34	30	38	30	21	13	[7] 78
Mountain	9	9	9	0	0	18	0	18	27	[8] 9
Pacific	8	26	13	21	8	8	16	8	21	16

INFLUENZA DEATH RATES

	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927
95 cities	8	7	10	[2] 6	7	6	5	7	[3] 6	[9] 3
New England	2	2	12	0	9	2	0	5	5	5
Middle Atlantic	6	9	9	5	9	5	6	6	7	2
East North Central	8	4	10	4	3	5	8	5	5	[5] 3
West North Central	8	6	4	4	4	2	6	10	8	2
South Atlantic	8	17	6	[2] 9	4	9	6	2	8	6
East South Central	36	5	36	10	16	5	5	25	[3] 0	[6] 0
West South Central	13	17	18	26	22	17	22	4	13	4
Mountain	18	0	9	9	0	9	0	27	9	[8] 9
Pacific	4	3	0	7	4	0	0	10	4	3

PNEUMONIA DEATH RATES

	June 5, 1926	June 4, 1927	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927
95 cities	105	93	95	[2] 94	87	87	73	74	[3] 75	[9] 73
New England	116	116	101	88	87	107	68	86	92	60
Middle Atlantic	131	108	110	112	95	95	83	85	90	71
East North Central	98	79	87	93	74	86	60	71	61	[5] 79
West North Central	51	58	59	50	74	48	44	52	38	77
South Atlantic	79	110	96	[2] 65	112	61	95	46	89	57
East South Central	124	51	124	112	98	71	124	56	[3] 121	[6] 102
West South Central	93	82	88	103	66	95	71	48	53	73
Mountain	146	72	82	90	100	153	109	54	46	[8] 92
Pacific	67	97	67	83	74	100	42	131	42	69

[2] Greenville, S. C., not included.
[3] Covington, Ky., not included.
[4] Indianapolis, Ind., Montgomery, Ala., Fort Smith, Ark., and Helena, Mont., not included.
[5] Indianapolis, Ind., not included.
[6] Montgomery, Ala., not included.
[7] Fort Smith, Ark., not included.
[8] Helena, Mont., not included.
[9] Indianapolis, Ind., Montgomery, Ala., and Helena, Mont., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

CANADA

Communicable diseases—Week ended June 25, 1927.—The Canadian ministry of health reports cases of certain communicable diseases in seven Provinces of Canada for the week ended June 25, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever				1				1
Influenza	19				1			20
Smallpox				20	1	2	9	32
Typhoid fever		4	91	8			1	104

Communicable diseases—Ontario—June, 1927 (Comparative).—During the month of June, 1927, communicable diseases were reported in the Province of Ontario as follows:

Disease	1927		1926	
	Cases	Deaths	Cases	Deaths
Cerebrospinal meningitis	3		5	
Chicken pox	851		454	
Diphtheria	202	8	188	12
Erysipelas	1		1	
German measles	602		433	
Gonorrhea	149		65	
Influenza	2	3		20
Lethargic encephalitis	1	2		
Measles	1,408	9	2,976	12
Mumps	151		37	
Pneumonia		25		159
Puerperal septicemia		1		
Poliomyelitis (infantile paralysis)	1		2	
Scarlet fever	410	6	373	3
Septic sore throat	8			
Smallpox	70		36	
Syphilis	136		72	
Tuberculosis	111	57	164	77
Typhoid fever	52	2	33	
Whooping cough	143	4	290	6

Communicable diseases—Quebec—Week ended July 2, 1927.—The bureau of health of the Province of Quebec reports cases of certain communicable diseases for the week ended July 2, 1927, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	1	Scarlet fever	49
Chicken pox	7	Tuberculosis	14
Diphtheria	38	Typhoid fever	75
German measles	2	Whooping cough	5
Measles	44		

Typhoid fever—Montreal—January 2–July 9, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	Apr. 16, 1927	175	38
Jan. 15, 1927	4	3	Apr. 23, 1927	125	43
Jan. 22, 1927	1	2	Apr. 30, 1927	105	23
Jan. 29, 1927	3	1	May 7, 1927	106	19
Feb. 5, 1927	1	0	May 14, 1927	367	16
Feb. 12, 1927	0	0	May 21, 1927	770	26
Feb. 19, 1927	1	2	May 28, 1927	353	88
Feb. 26, 1927	1	1	June 4, 1927	239	37
Mar. 5, 1927	9	1	June 11, 1927	128	36
Mar. 12, 1927	203	4	June 18, 1927	86	
Mar. 19, 1927	383	14	June 25, 1927	75	23
Mar. 26, 1927	568	23	July 2, 1927	66	21
Apr. 2, 1927	649	48	July 9, 1927	52	10
Apr. 9, 1927	386	40			

CANARY ISLANDS

Plague—Laguna—June 15, 1927.—A case of plague was reported at Tejina, district of Laguna, Canary Islands, June 15, 1927.

EGYPT

Communicable diseases—May 7–27, 1927.—During the period May 7–27, 1927, communicable diseases were reported in Egypt as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Cerebrospinal meningitis	5		Typhoid fever	119	
Influenza	203		Typhus fever	166	27
Smallpox	12	2			

GREAT BRITAIN

Marriages, 1926, England and Wales—Correction.—The number of marriages and the marriage rate for England and Wales for the year 1926, as given in the Public Health Reports, Volume 42, No. 22, June 3, 1927, page 1543, are incorrect. The assistant registrar general states that the number of marriages was 279,321, and the marriage rate 7.1 per 1,000 population.

JAMAICA

Smallpox (alastrim)—May 29–June 25, 1927.—During the four weeks ended June 25, 1927, 9 cases of smallpox (reported as alastrim) were notified in the island of Jamaica, occurring at localities other than Kingston.

Other communicable diseases.—During the same period other communicable diseases were reported as follows:

Disease	Cases		Disease	Cases	
	Kingston	Other localities		Kingston	Other localities
Chicken pox	21	37	Lethargic encephalitis		1
Diphtheria		1	Puerperal fever		2
Dysentery	9	9	Tuberculosis	21	39
Erysipelas		1	Enteric fever	24	79

Chicken pox.—Reports of occurrence of chicken pox in the island of Jamaica for the period under report were as follows: Week ended June 4, 3 cases; week ended June 11, 23 cases; week ended June 18, 2 cases; week ended June 25, 9 cases.

MALTA

Communicable diseases—May, 1927.—During the month of May, 1927, communicable diseases were reported from the island of Malta as follows:

Disease	Cases	Disease	Cases
Broncho-pneumonia	6	Pneumonia	3
Chicken pox	7	Poliomyelitis	1
Diphtheria	2	Scarlet fever	6
Erysipelas	7	Trachoma	46
Influenza	4	Tuberculosis	18
Lethargic encephalitis	1	Typhoid fever	27
Malta fever	61	Whooping cough	118

MADAGASCAR

Plague—April 1-15, 1927.—During the period April 1 to 15, 1927, 88 cases of plague with 82 deaths were reported in the island of Madagascar. The distribution of occurrence by Provinces was as follows: Ambositra—cases, 17; deaths, 17. Antisirabe—cases, 5; deaths, 5. Miarinarivo (Itasy)—cases, 5; deaths, 5. Moramanga—cases, 2; deaths, 2. Tananarive—cases, 57; deaths, 51. Tananarive Town—cases, 2; deaths, 2. Distribution according to type of disease was as follows: Bubonic, 42 cases; pneumonic, 17 cases; septicemic, 29.

SENEGAL

Plague—June 13-19, 1927.—During the week ended June 19, 1927, 21 cases of plague with 10 deaths were reported in Senegal, West Africa. The distribution of occurrence according to locality was as follows: Baol region—cases, 3; deaths, 1. Denkou and Guindeul, suburbs of Rufisque—cases, 5; deaths, 2. Medina, suburb of Dakar—cases, 2; deaths, 2. Thies—cases, 5; deaths, 2. Tivaouane district—cases, 6; deaths, 3.

Yellow fever.—During the same period one fatal case of yellow fever, occurring in a European, was reported at M'Bour.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the lists of countries included or the figures for the particular countries for which reports are given:

Reports Received During Week Ended July 22, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-28	1	1	
India:				
Calcutta	May 22-June 4	104	70	
Karachi	May 29-June 4	1	1	
Rangoon	do	1	1	
Indo-China (French):				
Saigon	May 7-27	70	53	
Siam	May 22-28	19	10	
Bangkok	do	5	1	

PLAGUE

Place	Date	Cases	Deaths	Remarks
Azores.				
St. Michaels Island	May 15-June 3	2		
Canary Islands:				
Laguna District—				
Tejina	June 17	1		
Ceylon:				
Colombo	May 22-June 4	5	3	
Egypt:				
Alexandria	June 4-10	1		
Beni-Souef	do	1		
India:				
Madras	May 15-21	11	2	
Rangoon	May 29-June 4	3	2	
Java:				
Batavia	May 22-28	12	12	
Madagascar	Apr. 1-15	88	82	
Ambositra	do	17	17	
Antsirabe	do	5	5	
Miarinarivo (Itasy)	do	5	5	
Moramanga	do	2	2	
Tananarive	do	59	53	
Tananarive town	do	2	2	
Peru	May 1-31			Cases, 7; deaths, 3.
Libertad	do	1	1	
Lima	do	6	2	
Senegal	June 13-19	21	10	

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria:				
Oran	June 11-20	16		
Brazil:				
Rio de Janeiro	May 29-June 11	2	2	
Canada	June 19-25			Cases, 32.
Alberta	do	9		
Manitoba	do	1		
Winnipeg	June 24-July 7	4		
Ontario	June 19-25	20		
Ottawa	June 26-July 9	18		
Toronto	June 19-25	4		
Saskatchewan	do	2		
China:				
Amoy	May 22-28			Prevalent.
Hong Kong	May 22-June 4	7	9	
Manchuria—				
Fushun	May 29-June 4	3		
Tientsin	May 22-28	4		
Chosen:				
Chinnampo	May 1-31	1		
Gensan	do	1		
Egypt	May 7-27			Cases, 12; deaths, 2.
France:				
Paris	June 1-10	4		

[1] From medical officers of the Public Health Service, American consuls and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended July 22, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Great Britain:				
England and Wales—				
Cardiff	June 19-25	2		
Liverpool	do	1		
London	June 12-18	1		
Sheffield	June 12-25	12		
Scotland—				
Dundee	June 19-25	1		
India:				
Calcutta	May 22-June 4	75	59	
Karachi	May 29-June 4	3	2	
Madras	June 5-11	3	1	
Rangoon	May 22-June 4	36	10	
Indo-China (French):				
Saigon	May 14-20	1	1	
Jamaica	May 29-June 25	9		Reported as alastrim.
Japan:				
Nagasaki City	Reported July 9	20		
Java:				
Batavia	May 22-28	1		
Mexico:				
Durango	June 1-30		1	
San Luis Potosi	June 26-July 2		1	
Persia:				
Teheran	Mar. 21-Apr 20		4	
Portugal:				
Lisbon	June 12-25	5		
Siam	May 22-28	4	2	
Bangkok	do		1	
Straits Settlements:				
Singapore	May 15-21	1		

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria:				
Oran	June 11-20	4		
Chile:				
Concepcion	May 29-June 4		1	
China:				
Manchuria—				
Mukden	do	1		
Chosen:				
Chemulpo	May 1-31	4		
Gensan	do	1		
Seoul	do	8		
Egypt	May 7-27	166	27	
Alexandria	May 28-June 3	2	1	
Mexico:				
Mexico City	May 13-18	3		Including municipalities in Federal District.
Palestine:				
Safad	June 7-13	1		
Peru:				
Arequipa	Apr. 1-30		1	
Union of South Africa:				
Cape Province	May 15-28			Outbreak.
Natal	May 15-21			Do.
Orange Free State	May 15-28			Do.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Liberia:				
Monrovia	June 1-July 8		4	
Senegal:				
M'Bour	June 13-19	1	1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to July 15, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Swatow	May 15-28	7	8	
India	Apr. 17-May 14			Cases, 14,805; deaths, 7,207.
Bombay	May 8-14	1		
Calcutta	May 8-21	215	134	
Rangoon	May 8-28	7	4	
India, French Settlements in	Mar. 30-Apr. 30	4	2	
Indo-China (French):				
Saigon	Apr. 30-May 6	54	37	Including Cholon.
Siam	May 1-21			Cases 62, deaths, 33.
Bangkok	do	18	5	

PLAGUE

Place	Date	Cases	Deaths	Remarks
Argentina:				
Formosa	Reported July 6	3		
British East Africa:				
Kenya	Apr. 24-May 7	7	14	
Tanganyika	Mar. 29-May 7		36	
Uganda	Jan. 1-Feb. 28	138	121	
Do	Mar 27-May 14	72	57	
Ceylon:				
Colombo	May 1-21	6	4	Plague rats, 4.
Egypt	May 21-27			Cases, 1. Total from Jan. 1-May 27, 1927: Cases, 40; corresponding period, 1926. Cases, 43.
Tanta District	do	1		
Greece:				
Patras	May 30-June 11	4		
India	Apr. 17-May 14			Cases, 5,584; deaths, 4,121.
Bombay	May 8-28	54	51	
Madras	May 1-14	10	7	
Rangoon	May 8-28	10	9	
Indo-China (French)	Apr. 1-May 10	7		
Iraq:				
Baghdad	Apr. 8-16	3	1	
Java:				
Batavia	May 1-21	48	49	Province.
East Java and Madura—				
Pasoeroean Residency	May 9			Outbreak reported at Ngadiwono.
Surabaya	Apr. 17-May 7	24	24	
Madagascar				Mar. 16-31, 1927: Cases, 96; deaths, 86. Bubonic, 42; pneumonic, 21; septicemic, 33 cases.
Province—				
Ambositra	Mar. 16-31	15	10	Bubonic, 11; pneumonic, 1; septicemic, 3.
Antsirabe	do	1	1	Septicemic.
Miarinarivo (Itasy)	do	27	27	Bubonic, 3; pneumonic, 9, septicemic, 15.
Moramanga	do	6	6	Bubonic, 3; septicemic, 3.
Tananarive	do	43	38	Bubonic, 24; pneumonic, 11; septicemic, 8.
Tananarive Town	do	4	4	Bubonic, 1; septicemic, 3.
Peru	Apr. 1-30			Cases, 15; deaths, 5.
Departments—				
Ica	do	1		
Lambayeque	do	1		
Libertad	do	6	3	
Lima	do	7	2	
Lima City	do	5	1	
Senegal	May 23-June 8			Cases, 39; deaths, 10.
Baol	June 2-8	2		
Guindel	do	6		
Rufisque	May 23-29	23	10	
Thies District	May 23-June 8	7		
Tivaouane	June 2-8	1		
Siam	Apr. 1-May 21			Cases, 8; deaths, 7.
Bangkok	May 8-14	1	1	
Tunisia	Reported May 20	15		In districts of Sfax and Susa.
Turkey:				
Constantinople	May 13-19	1		
Union of South Africa:				
Cape Province—				
Maraisburg district	May 1-14	2	2	Native.

[1] From medical officers of the Public Health Service, American consuls, and other sources. For reports received from January 2 to June 24, 1927, see Public Health Reports for June 24, 1927. The tables of epidemic diseases are terminated semiannually and new tables begun.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to July 15, 1927—Continued

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-May 10	168		
Algiers	May 11-20	4		
Oran	May 21-31	15		
Brazil:				
Rio de Janeiro	May 22-28	1		
British East Africa:				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 29-May 7		22	
British South Africa:				
Northern Rhodesia	Apr. 30-May 6	1		Native.
Canada	June 5-18			Cases, 68.
Alberta	June 12-18	15		
Calgary	June 12-25	5		
British Columbia—				
Vancouver	May 23-29	2		
Manitoba	June 5-18			Cases, 6.
Winnipeg	June 12-24	5		
Ontario	June 5-18			Cases, 34.
Ottawa	June 12-25	10		
Quebec	June 19-25	1		
Saskatchewan	June 12-18	13		
Ceylon	May 1-7			Cases, 3; deaths, 1.
China:				
Amoy	May 8-14	1		
Chefoo	do			Present.
Foochow	do			Do.
Hong Kong	do	4	2	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-28	2		
Dairen	May 2-8	3	3	
Fushun	May 15-28	5		
Mukden	May 22-28	2		
Ssupingkai	May 8-14	1		
Tientsin	May 8-21	7		
Chosen	Feb. 1-Apr. 30	354	84	
Chinnampo	Apr. 1-30	1		
Fusan	do	1		
Seishin	do	1		
Curacao	May 29-June 4	1		Alastrim.
Egypt:				
Alexandria	May 21-27	3	1	
France	Apr. 1-30			Cases, 66.
Gold Coast	Mar. 1-30	18	4	
Great Britain:				
England and Wales	May 22-June 18			Cases, 982.
Bradford	May 29-June 11	2		
London	May 15-21	1		
Newcastle on Tyne	June 12-18	1		
Scotland—				
Dundee	May 29-June 4	3		
India				Apr. 17-May 14, 1927: Cases, 32,626; deaths, 7,741.
Bombay	May 8-28	156	97	
Calcutta	May 8-21	119	88	
Karachi	May 15-28	4	3	
Madras	May 22-June 4	3	1	
Rangoon	May 8-28	44	12	
India, French Settlements in	Mar. 20-Apr. 30	96	59	
Indo-China (French)	Mar. 21-Apr. 10	190		
Iraq:				
Baghdad	Apr. 10-16	2		
Basra	do	1		
Italy	Apr. 10-May 7	5		
Japan	Apr. 3-May 7	19		
Java:				
Batavia	do	1		
East Java and Madura	Apr. 24-30	1		
Latvia	Apr. 1-30	1		
Mexico:				
San Luis Potosi	May 29-June 18		5	
Tampico	June 1-10	1	1	
Morocco	Apr. 1-30	55		
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in two localities.
Persia:				
Teheran	Feb. 21-Mar. 21		1	
Poland	Apr. 10-23	3		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to July 15, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Portugal				
Lisbon	May 29-June 11	5		
Siam	May 1-21			Cases, 6; deaths, 5.
Bangkok	May 15-21	1	1	
Spain				
Valencia	May 29-June 4	2		
Straits Settlements:				
Singapore	Apr 1-May 10	2	1	
Tunisia	do	5		
Tunis	June 1-10	1		
Union of South Africa:				
Transvaal -				
Barberton District	May 1-7			Outbreaks.

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-May 10	109	16	
Algiers	May 11-June 10	21		
Oran	May 21-June 10	10		
Bulgaria	Mar. 1-31	58	6	
Sofia	June 4-10	1		
Chile.				
Ligua	Mar. 16-31	2		
Chosen	Feb. 1-Apr. 30			Cases, 330; deaths, 30.
Seoul	Apr. 1-30	1		
Czechoslovakia				Apr. 1-30, 1927: Cases, 21.
Egypt				
Alexandria	May 21-27	1		
Estonia				Apr 1-30, 1927: Case, 1.
Iraq				
Baghdad	Apr. 24-30	1		
Latvia	Apr. 1-30	12		
Mexico	Feb. 1-28			Deaths, 26.
Mexico City	May 29-June 11	4		Including municipalities in Federal District.
Morocco	Apr. 1-May 7	249		
Palestine	May 24-June 6			Cases, 3
Haifa	do	2		
Mahnaim	May 17-23	1		In Safad District.
Safad	May 17-30	2		
Poland	Apr. 10-30	398	33	
Portugal.				
Lisbon	May 29-June 4	1		
Rumania	Apr. 3-May 7	583	41	
Tunisia	Apr. 21 May 10	78		
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa	Apr. 1-30			Cases, 55; deaths, 8. Native. In Europeans, cases, 2.
Cape Province	do	42	5	
East London	May 22-28	1		
Glen Grey District	May 1-7			Outbreaks.
Qumbu District	do			Do.
Natal	Apr. 1-30	7	3	
Orange Free State	do	5		
Transvaal	do	1		
Yugoslavia	May 1-31			Cases, 4.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Liberia:				
Monrovia	May 29-June 4	1	1	
Senegal	May 27			Cases, 3.
M'Bour	May 27-June 8	2	2	
Ouakam	June 2-8	1	1	
Tivaouane	May 27-June 8	5	5	

X

TREASURY DEPARTMENT

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VOLUME 42 :: :: NUMBER 30

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UNITED STATES PUBLIC HEALTH SERVICE

HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

Asst. Surg. Gen. C. C. PIERCE, *Chief of Division*

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They contain: (1) Current information of the prevalence and geographic distribution of preventable diseases in the United States in so far as data are obtainable, and of cholera, plague, smallpox, typhus fever, yellow fever, and other communicable diseases throughout the world. (2) Articles relating to the cause, prevention, or control of disease. (3) Other pertinent information regarding sanitation and the conservation of the public health.

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PUBLIC HEALTH REPORTS

VOL. 42 JULY 29, 1927 NO. 30

THE ILLNESS RATE AMONG MALES AND FEMALES[1]

Hagerstown Morbidity Studies No. VI

By EDGAR SYDENSTRICKER, *Statistician, United States Public Health Service*

In the preceding papers giving the results of a morbidity study which was conducted in Hagerstown, Md., during the period of 28 months from December 1, 1921, through March 31, 1924,[2] occasional mention was made of certain differences in the morbidity rates according to sex. In the present article it is planned to present data bearing on certain phases of the sex differences in incidence of illness. A later report will take into account the distinction as to sex when specific diseases and groups of diseases are considered at different ages.

The annual morbidity rate from all causes, as observed during the 28 months' period, was 970 per thousand for males and 1,262 for females. The ratio of the illness rate for females to that for males was thus 1.3 to 1. Since it has been shown that the age distribution of the populations of the two sexes was similar, this marked contrast can not be due to differences in age. These rates, it may be noted, are for males and females of all ages, in all conditions of health, and living in an environment that, so far as we were able to determine, was in no sense abnormal or unusual.

It may be informative and it will be advisable—in order to subject our results to closer scrutiny—to consider the sex differences in the incidence of sickness in this general population group (1) from different causes and (2) at different ages, and to discuss the possible effect of the method of collecting the data upon the difference in rates of illness among males and females. Some comparisons of our results with other records will also be of interest.

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[1] From the Office of Statistical Investigations, United States Public Health Service. Other Hagerstown morbidity studies published are—

I. A Study of Illness in a General Population Group. Method of Study and General Results. Pub. Health Rep., Sept. 24, 1926, Reprint No. 1112.

II. The Reporting of Notifiable Diseases in a Typical Small City. Pub. Health Rep., Oct. 8, 1926, Reprint No. 1116.

III. The Extent of Medical and Hospital Service in a Typical Small City. Pub. Health Rep., Jan. 14, 1927, Reprint No. 1134.

IV. The Age Curve of Illness. Pub. Health Rep., vol. 42, No. 23, June 10, 1927. (Reprint No. 1163.)

V. A Comparison of the Incidence of Illness and Death. Pub. Health Rep., vol. 42, No. 25, June 24, 1927. (Reprint No. 1167.)

[2] For a detailed description of the method of the study and definitions and discussion of "illnesses" and of other terms employed, as well as the procedure in computing rates, the reader is referred to the first paper of this series.

ILLNESS AMONG MALES AND FEMALES FROM DIFFERENT CAUSES

In Table 1 the annual incidence rate of illnesses classified according to broad disease groups is shown, as well as the ratio of the rate for females to the rate for males for each disease group. This classification, perhaps, may be more properly defined as according to the *kinds* of illness—not necessarily according to the diseases which may have caused illness, although in the majority of instances the grouping by cause is probably accurate. With this qualification in mind, it will be observed that only for three groups of diseases was the male rate higher than that for the female. For the general groups of "epidemic, endemic, and infectious diseases," the female rate was 92 per cent of the male rate. This is in accordance with the general experience with communicable diseases which occur almost entirely in childhood. The female rate for external causes (including accidents) was only 61 per cent of that for the male, which is also in accord with other experiences and with mortality records. For diseases of the skin the female rate was 75 per cent of the male rate; and for diseases of the eyes and ears the female rate was only 10 per cent in excess of the male rate. For the large group of illnesses classified as respiratory diseases and disorders, which constitute considerably over half of the illnesses recorded, the female rate was 20 per cent higher than that for the male. The next largest class of illnesses consisted of those classified under the head of diseases and disorders of the digestive system; and the female rate for this group was 44 per cent higher than the male rate. For the important group of illnesses resulting from diseases and disorders of the circulatory system and of the kidneys and annexa the female rate was nearly double that for the males. The female rate was twice that of the male rate for illnesses due to the general diseases. The next highest ratio of the female to the male rate was for diseases and disorders of the nervous system. The female rate was nearly sixteen times the male rate for nonvenereal diseases of the reproductive organs.

TABLE 1.—*Incidence of illness among males and females in a white population group observed from December 1, 1921, through March 31, 1924, in Hagerstown, Md., by broad groups of diseases*

Cause (Numbers in parentheses refer to those given in the International List of Causes of Death, 1920)	Annual rate per 1,000		Ratio of rate for females to rate for males
	Males	Females	
All causes	969.5	[1] 1,215.1	1.25
Respiratory diseases and disorders (11, 31, 97–107, 109)	608.7	732.0	1.20
Epidemic, endemic, and infectious (1–42, except 11, 31)	92.5	85.1	.92
General diseases (43–69)	14.9	30.8	2.07
Diseases and disorders of nervous system (70–84, part 205)	23.3	72.3	3.10
Diseases of eyes and ears (85–86)	22.4	24.5	1.10
Diseases and disorders of circulatory system and kidneys and annexa (87–96, 128–134)	28.0	48.2	1.72
Diseases and disorders of the digestive system (110–127, parts of 108 and 205)	89.9	129.4	1.44
Nonvenereal diseases of reproductive organs (135–142)	1.5	23.8	15.86
Puerperal conditions (143–150, part 205)	-------	47.2	-------
Diseases of the skin (151–154)	22.4	16.7	.75
External causes, including accidents (165–203)	49.7	30.3	.61
All other and ill-defined (155–164, part 205)	16.4	22.1	1.35

[1] Excluding puerperal conditions. The rate including such conditions is 1,262.3.

ILLNESSES AMONG MALES AND FEMALES AT DIFFERENT AGES

The age curves of illness for males and females, based on the rates given in Table 2, are shown in Figure 1.

TABLE 2.—*Incidence of illness from all causes as observed in Hagerstown, Md., among white persons of different sexes and ages, December 1, 1921–March 31, 1924*

Age in years	Annual rate per 1,000		Ratio of rate for females to rate for males
	Males	Females	
All ages	943	1,210	1.28
0–4	1,668	1,498	.90
5–9	1,580	1,525	.97
10–14	1,104	1,269	1.15
15–19	680	844	1.24
20–24	506	888	1.75
25–29	541	1,050	1.94
30–34	589	1,214	2.06
35–44	632	1,191	1.89
45–54	728	1,279	1.76
55–64	697	1,197	1.72
65+	899	1,215	1.35

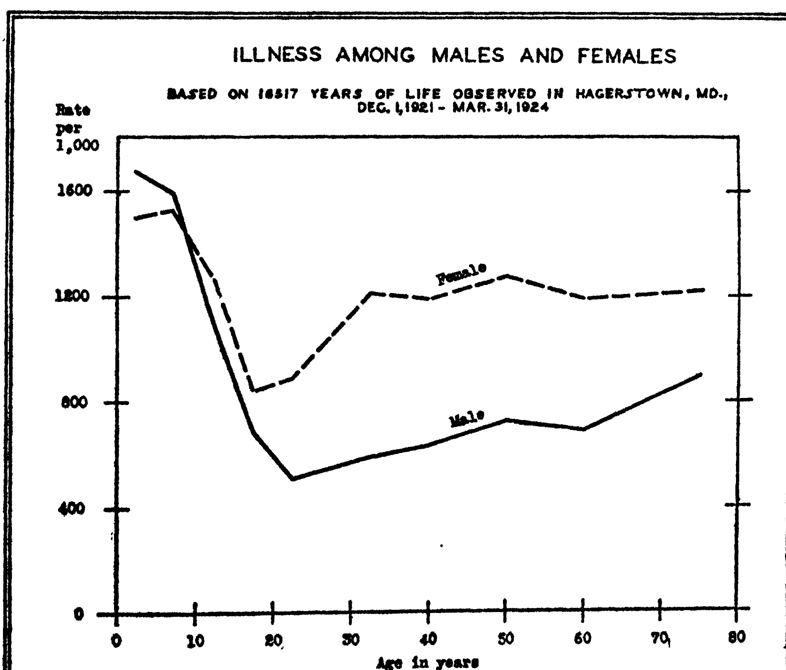

FIG. 1

In the younger ages the rates exhibit some extremely interesting differences. In general, the rate for both males and females is at its highest point under 10 years of age, and thereafter rapidly drops until 20 years of age, but with two important sex differences: (*a*)

Under 5 years of age the female rate is only 90 per cent of the male rate, and in the age period 5–9 it is still slightly under that of males; (*b*) in the age period 10–14 the ratio changes entirely and the female rate is 15 per cent higher than that for the males. In the adult ages the female rate as recorded in our study is nearly twice the male rate, except in old age (65 years and over).

While it is not the purpose of this communication to deal with sex-age rates according to specific diseases, yet, in view of the fact

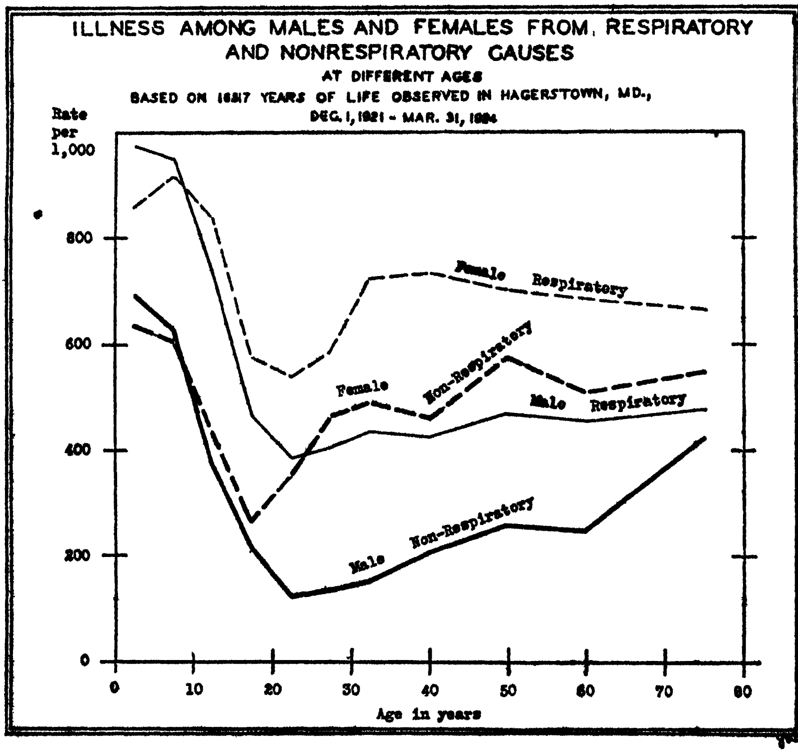

FIG. 2

that 60 per cent of all illnesses recorded in this study are due to respiratory conditions, it is pertinent to see whether the differences between the male and female rate in different ages are due to respiratory conditions only or prevail also for nonrespiratory conditions. In Table 3 the sex-age specific rates are given for these two groups of diseases, with the result that very much the same differences in the age curves are shown for each group of diseases as for all illnesses (see Fig. 2).

Table 3.—*Incidence of illness from respiratory and nonrespiratory diseases as observed in Hagerstown, Md., among white persons of different sexes and ages, December 1, 1921–March 31, 1924*

Age in years	Annual rate per 1,000			
	Respiratory diseases		Nonrespiratory diseases	
	Males	Females	Males	Females
All ages	602	723	541	487
0–4	974	861	695	637
5–9	949	919	631	606
10–14	733	838	371	431
15–19	469	588	211	266
20–24	384	539	122	349
25–29	407	586	134	463
30–34	437	724	151	489
35–44	427	734	205	457
45–54	470	701	258	578
55–64	452	688	246	508
65+	477	606	422	549

From the point of view of resistance to disease a comparison may be made of the proportions of males and females who did not suffer any illness (of the kind recorded) during the period of the study. Similarly, from the point of view of susceptibility to disease and its morbid effects, a comparison may be made of the proportions of males and females who were ill frequently. For this purpose, those individuals who were not under observation for at least 26 of the total 28 months have been excluded. The two comparisons are given in Table 4 and are graphically shown in Figure 3. Marked sex differences in both comparisons are manifested; these will be discussed in connection with the other sex differences that have been noted.

Table 4.—*Proportions of white persons observed for 26–28 months in Hagerstown, Md., who were not ill and who were ill four or more times: By sex and age*

Age	Per cent				Number of persons under observation for incidence of illness for 26–28 months	
	Not ill		Ill 4 or more times			
	Males	Females	Males	Females	Males	Females
2 years and over	22.83	14.26	21.43	29.96	2,501	2,650
2–4	5.17	4.19	45.39	43.26	271	215
5–9	7.22	7.67	48.66	42.05	374	352
10–14	17.48	12.06	25.52	28.72	286	282
15–19	28.04	23.30	10.75	17.96	214	206
20–24	34.09	26.16	4.55	15.12	132	172
25–29	36.25	15.11	6.25	23.56	160	225
30–34	32.18	14.98	6.32	28.50	174	207
35–44	33.63	17.33	9.91	31.20	333	375
45–54	20.78	14.05	13.60	30.77	272	299
55–64	28.47	14.56	12.50	30.38	144	158
65+	19.15	12.58	14.18	25.16	141	159

DISCUSSION

The foregoing indications can not be accepted without examining more closely the manner in which the information was obtained and its possible effect upon the particular results with which we are concerned. The results of other studies and records may also be referred to.

It is fully realized, of course, that a "sickness," "illness," or "morbidity" rate does not reveal adequately the presence of certain diseases or conditions. Obviously it can not reveal the prevalence

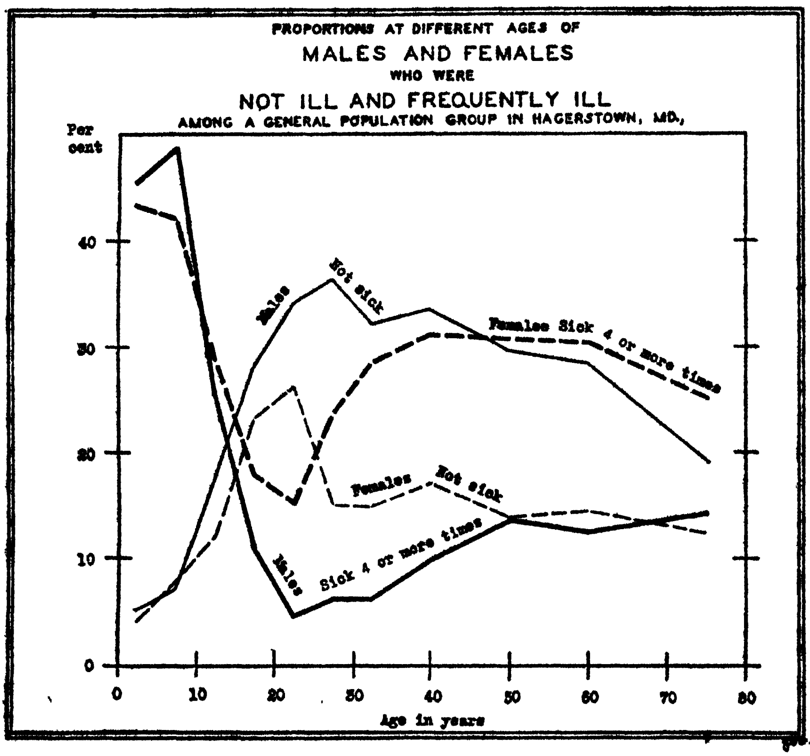

FIG. 3

of those diseases or conditions which do *not* manifest themselves in sickness at all or very rarely. With equal obviousness it ought to be clear that since the *frequency* rate, which is the rate used in this study, measures the *incidence* of illness, it is not a suitable term for measuring the *prevalence of disease* and can be used as indicating the *incidence* of disease only when those diseases occur but once, and cause definitely morbid effects, within the period of observation.[3]

[3] The reader is referred to the first and fifth papers of this series for more extended discussions of the limitations and significance of the data.

As was stated in the first paper of this series, the record of illness in our study was furnished by an adult member, usually the mother of the family, of each household visited. Might not this fact mean that a more complete record of illnesses, particularly the minor ailments or those conditions which were manifested by subjective symptoms, was obtained for these informants than for other members of the household?

It is at once apparent that this condition could have no appreciable effect upon the illness rate among younger persons (up to 20 years of age), but the possibility of its effect upon comparative rates for adult males and females is undoubtedly great. For the sake of clarity in presentation we may discuss separately (*a*) the sex differences in the illness rate among persons under 20 years of age, and (*b*) those among older persons.

THE AGE PERIOD 0–19

The higher incidence of sickness among males in childhood is in accordance with general experience with communicable diseases and is corroborated by such records of illness as are available. Similarly, the excess of the female illness rate in the adolescent period, as shown by the Hagerstown study, seems to be suggested by other experience also.

The first study based on continuous morbidity observations that we are aware of was one of a small group of persons (550 in number) who constituted the families of workers in a cotton-mill village in South Carolina in 1918 (1). The ratios of the "disabling sickness" rate among males to that among females at different ages during the six-months period March–August were as follows:

A cotton-mill village in South Carolina, March–August, 1918

Age group	Ratio of female sickness rate to male rate
0–4	1.26
5–9	.72
10–14	1.07
15–19	2.15

A higher morbidity rate among adolescent girls is manifested, but the number of persons observed for a six-months period is almost too small to yield significant rates for 5-year age groups.

Morbidity records for the school population of Hagerstown were kept for several years in connection with the general morbidity study, and the results for the period December, 1921, to May, 1923, inclu-

sive, have been presented by Collins (2). The ratios of the female rate to the male rate for sickness entailing absence from school, by age, was as follows:

Hagerstown (Md.) school children, 1921–1923

Age group	Ratio of female sickness rate to male rate
6 years and under	1.25
7	.92
8	1.05
9	1.07
10	1.20
11	1.08
12	1.08
13	1.20
14	1.18
15	1.12
16 and over	1.48

This result corresponds fairly well to that indicated for similar ages in the general population group. (See Table 2.)

These two sets of data, in addition to the present study, are all the material in this country that we are aware of which affords the necessary detail as to sex and age concerning the *incidence* of sickness among persons under 20 years of age. There are, however, some other observations which are expressed in different terms. Collins, in an earlier report (3), gave the percentage of school days lost by several thousand Missouri children on account of sickness in 1919–1921. Without reproducing his results in detail, the ratios of the female percentage to the male percentage for each age group during the two school years are given below:

Missouri school children, 1919–1921

Age group	Ratio of female absenteeism (sickness) to that of males for the school year of—	
	1919–20	1920–21
6–7	1.02	0.96
8–9	1.13	1.22
10–11	1.02	1.14
12–13	1.18	1.11
14–16	1.02	1.04

The number of children in the last age group was small and the percentages may not be significant. Otherwise, the comparison in the main tends to confirm the observation yielded by incidence rates, that in childhood the female rate is lower than the male rate, but that in later childhood and adolescence the female rate is higher.

A study of the *prevalence* of disabling sickness, as ascertained by a single house-to-house canvass of 4,161 persons in seven South Caro-

lina cotton-mill villages in 1916 (4), yields the following ratios of the female rate to the male rate at different ages, which are quite in accordance with the Hagerstown results:

Seven South Carolina cotton mill villages, 1916

Age group	Ratio of female sickness rate to male rate
0- 4	0.87
5- 9	1.06
10-14	2.52
15-24	[1] 1.88

[1] Exclusive of confinements; with confinements the ratio is 2.40.

Finally, we may refer to a recent study of respiratory attacks in families of medical officers of the United States Army, Navy, and Public Health Service, and of members of several university faculties (5). While the conditions recorded were respiratory only, the fact that these conditions caused the majority of sicknesses and that in Hagerstown the same sex differences appear as for all causes of sickness in the ages under consideration, warrant a mention of the results of this inquiry here. The ratios of the female rate to the male rate at different ages are as follows:

Families of medical officers of United States Army, Navy, and Public Health Service, 1924

Age group	Ratio of female respiratory rate to male rate
0- 4	0.94
5- 9	.92
10-14	1.09
15-24	1.23

The broad indications furnished by the results of the Hagerstown study, together with such other experience as is available, so far as the ages under 20 are concerned, are—(1) that males in early childhood are less resistant to diseases ("resistance" being measured by infrequency of illness) than females; (2) that not much difference in resistance on the part of the two sexes is manifested in late childhood or just before pubescence; (3) that during pubescence and in the whole period of adolescence the female is more susceptible to disease and morbid conditions than the male.

These interpretations require further inquiry, of course, before they can be said to be established, particularly from the viewpoint of the etiology and biologic significance of the specific diseases and

conditions involved. We shall present more detailed evidence from the Hagerstown experience in a later study; but it may be stated that the relatively greater frequency of illness among (*a*) male children and (*b*) female adolescents appears for nearly all of the groups of causes and conditions into which we are accustomed to classify diseases and kinds of sickness.

Our broad interpretations may be carried a step further, however, without considering the specific diseases or conditions involved. We may seek an answer to these two questions: (1) Is the higher illness rate in either sex due to a larger proportion of "sickly" persons (i. e., those frequently ill) or is it characteristic of the entire group? (2) Does the sex difference in the mortality rate correspond to the sex difference in the illness rate or does one sex withstand an attack of disease better than the other?

On the first of these two points, reference may be made to Table 4 and Figure 3. The following ratios based on Table 4 express more precisely the comparison of the sexes:

Ratios of female illness rates to male rates as shown by the Hagerstown morbidity study of 5,151 persons observed during 26 to 28 months

Age group	No illness	4 or more illnesses
2- 4	0.81	0.95
5- 9	1.06	.86
10-14	.69	1.12
15-19	.83	1 67

Generally speaking, for the age period 2–19 years the proportion of males who were free from illness during 26 months was somewhat larger than that of the females. This result, if it is corroborated by further studies, modifies the foregoing interpretation of the ability of males in childhood to escape attacks of disease. But since we find the proportion of boys under 10 years of age who suffered frequent illness (four times or more in 26 months) also to be greater than that of girls our general interpretation requires the more exact statement, as follows: That the higher illness rate among males in childhood is due not only to a greater incidence of certain diseases—whether because of a lower resistance or a greater opportunity for contracting them—but to the existence of a larger moiety of individuals who are ill frequently, or of "sickly" persons.

On the other hand, this moiety of frequently sick, or "sickly" persons, is greater among adolescent girls than among boys, a difference which is not explained by menstruation or menstrual disorders, but persists when illnesses described by these conditions are subtracted. The higher female morbidity rate in adolescence is due not only to a smaller number of girls free from illness but also to a larger number who were ill frequently, as compared with boys of the same ages.

The relatively high illness rate among males in the age periods 0–4 and 5–9 years is similar to the relatively high mortality rate among males of these ages, but the similarity of the differential ratios ceases in adolescence, as the following table shows:

Ratios of female morbidity and mortality rates to those for males at different ages

Age group	Illness in Hagerstown, 1921–1924	Mortality in white population, United States registration area, 1923
0–4	0.90	0.81
5–9	.97	.83
10–14	1.15	.80
15–19	1.24	.92
20–24	1.75	.94

The suggestion is afforded that although the proportion of male children able to escape attacks of disease (as measured by illness) is less than that of female children, the inferiority of these males in resisting death, as compared with the females, is even greater. We need case fatality records for the satisfactory pursuit of this particular inquiry, for the reason that the mortality rate does not tell us which is the more important factor—the incidence of disease or the fatality of attack—but an approximation can be made, upon the assumption that our Hagerstown morbidity experience for these ages is typical, by comparing the illness rate with the mortality rate for each sex-age group. The comparison may be expressed as follows:

TABLE 5.—*Comparison of the estimated number of illnesses per death for persons of the same sex and age*

Age group	Estimated number of illnesses per death [1]		Ratio of females to males $\frac{B}{A}$
	Males (A)	Females (B)	
0–4	71	78	1.10
5–9	619	716	1.16
10–14	553	704	1.44
15–19	210	285	1.36
20–24	125	232	1.86

[1] Computed by dividing the Hagerstown annual illness rate for each sex-age group by the corresponding 1923 mortality rate for whites in the registration area of 1920.

This is a very crude comparison, of course, and the results can not be regarded as more than suggestive until more adequate data are available. But it is not without interest, since it does suggest that males in childhood (0–9 years of age) succumb somewhat more easily than females to attacks of disease, and that in adolescence, in spite of the fact that females are more frequently ill, resistance to death after attacks have taken place is below that of females to an even greater extent than in childhood.

ADULT AGES

Before any interpretation can be placed upon differences in the illness rates for adult males and females, the possible effect of the fact already referred to, that many women reported their own illnesses and ailments whereas relatively few men did, must be taken into account.

In order to obtain direct evidence on this point, we used the records of those families in which more than one adult female and at least one adult male were continuously resident. Since the original record contained a notation as to the identity of the informant on each case of illness, it was possible to compare the incidence of illness among those for whom other informants gave the information. In order to render as comparable as possible the two sets of records, only persons of adult age were included. The number of males reporting upon themselves in these households was not large enough to yield any information of value, but a comparison of three groups is possible: (1) Women reporting upon themselves; (2) women reported upon by other women in the same households; and (3) men in the same households who were reported upon, usually by their wives. Unfortunately for any correction of the total adult female rate, the incidence of illness among adults in these households was considerably lower than that in the total population observed. The annual rate per 1,000 for males in these households was 412 and for females 689 (whether reporting upon themselves or not), as against 642 for all adult males and 1,164 for all adult females. However, the ratio of the total adult female rate to the total adult male rate was 1.81 to 1, as against 1.67 to 1 in the households selected, a difference which is not too great to invalidate the comparisons we have in mind.

Illnesses from genito-urinary and puerperal diseases and conditions have been excluded in the comparisons which are given in Table 6.

TABLE 6.—*A comparison of the illnesses*[1] *incident among persons reporting upon themselves with those among persons reported upon in the same households canvassed in Hagerstown, Md., December 1, 1921–March 31, 1924: By sex*

	Persons reported upon by informants other than themselves		Persons reporting upon themselves
	Males	Females	Females
Annual illness rate per 1,000 adjusted for age [1]	412	552	833
Number of years of life observed	331	349	216
Number of cases [2]	142	190	180

[1] To the age distribution of the total population observed who were 20 years of age and over.
[2] Exclusive of genito-urinary and puerperal causes and conditions.

It appears from this sample that the illness rate among adult females, exclusive of genito-urinary and puerperal causes and con-

ditions, bore a ratio to the illness rate among males of 1.3 to 1 when the illnesses among both males and females were reported by persons other than those affected. The excess in the female rate thus persists after the influence of subjective diagnosis on the part of the informant is eliminated.

The number of cases occurring in these small groups is not sufficient to permit of a very detailed analysis according to the cause or condition involved, but it is possible to compare the rates for a few groups of conditions, as in Table 7.

TABLE 7.—*A comparison of the illnesses incident among persons reporting upon themselves with those among persons reported upon in the same households canvassed in Hagerstown, Md., December 1, 1921–March 31, 1924: By sex and certain causes or condition*

Cause or condition	Annual rate per 1,000 persons		
	When reported upon by informants other than themselves		When reporting upon themselves
	Males	Females	Females
Total respiratory illnesses	298	367	622
Colds and bronchitis	202	246	428
Influenza and grippe	61	88	122
Diseases and conditions of the nervous system, including headaches not otherwise classified	12	31	72
Diseases and disorders of the digestive system	35	62	68

We again observe that the adult female illness rate is higher than that for adult males for certain specific causes and conditions when the illnesses for both sexes are reported by informants other than the persons affected. The net result of this correction of our data can be indicated by comparing the ratios of the female rate to the male rate among persons reported upon, as determined from this sample, with similar ratios among all adults (15–64 years of age) observed in our study based upon the rates as found.

Ratio of female illness rates to male rates for certain groups of diseases as shown by the Hagerstown morbidity study (a) among all adult persons as recorded, and (b) in a group of adult persons whose illnesses were reported by informants other than themselves

Cause or condition	All persons 15–64 years of age (A)	Persons reported upon by informants other than themselves, 20 years of age and over (B)	Per cent by which (B) is less than (A)
All causes	1.79	1.34	25
Respiratory	1.51	1.23	19
Nervous	4.94	2.58	48
Digestive	2.08	1.77	15

It is thus indicated that the ratio of the illness rate for adult females to that for adult males as recorded in our study would have been about 25 per cent lower if all of the illnesses had been reported

by other informants than the individuals affected. The ratios for respiratory and digestive diseases would have been from 15 to 20 per cent lower, and for diseases and conditions of the nervous system the reduction in the rate would be about 50 per cent.

That a bias of the kind referred to may exist can not be doubted, and it is important to keep in mind its possible effect when comparing records of illness among persons reporting upon themselves with those among persons reported upon. In the particular group under consideration the illness rate among female informants was almost 70 per cent greater than that among females reported upon.[4]

With this explanation of the comparability of the illness rates for adult males and for adult females as afforded by the Hagerstown study, some reference to other experience will be of interest. It will not be possible in a short paper to refer to more than a few sources.

In connection with the industrial hygiene work of the United States Public Health Service and with the cooperation of a number of industrial establishments, this office has collected a considerable amount of records of disabling sickness among wage-earning males and females. The following series of ratios has been computed from the sickness rates for 11 large establishments, each covering an experience of five years. The sicknesses included only those causing disability for eight days or longer, excluded causes and conditions peculiar to females, and involved certification of sickness.[5]

Eleven industrial establishments

Establishment	Ratio of female sickness rate to male rate	Establishment	Ratio of female sickness rate to male rate
A	2.46	G	1.07
B	2.11	H	1.04
C	1.94	I	1.00
D	1.79	J	.71
E	1.47	K	.55
F	1.40		

In half of these establishments the rate among females was definitely higher than that among males; in three the rate was about the same, and in two the male rate was higher than the female. Before

[4] The possible effect of this factor was pointed out by Surg. J G Townsend and the writer in discussing the difference in the incidence of respiratory attacks among males and females in families of medical officers of the United States Army, Navy, and Public Health Service, the attacks in this instance having been reported by the adult males in the families concerned. The ratio of the female rate to that of the male for this group was 0.94 to 1 for all ages, the ratios for adult age groups being as follows:

25-34	0.80
35-44	.92
45-54	.83
55+	.96

The ratios in the ages 25 and over are contrary to the experience recorded for males and females when the attacks were not reported by the persons attacked.

[5] Whether or not the differences in the male and female rates are affected by differences in malingering, if such differences exist, it is impossible to say.

any conclusion can be drawn from figures such as these the ages of the persons concerned must be taken into account. In one establishment which may be taken as typical it was ascertained that 19 per cent of the men were over 45 years of age, compared with only 3 per cent of the women. The nature of the men's work and their working conditions in most of the plants were quite different from those of the women.

More representative of the morbidity situation where work and working conditions are fairly similar for males and females is the following series of ratios by age from the experience of the Hood Rubber Co., which has been made available to us. The sicknesses included are those which disabled the workers for at least two consecutive working-days and were, in almost every instance, reported upon by a nurse employed by the company.

Hood Rubber Co.

Age	Ratio of female sickness rate to the male rate
All ages	2.18
15-24	1.90
25-34	2.58
35-44	2.57
45+	1.28

A larger experience is given in a paper recently published by Brundage (6) which covers the sickness records of the Edison Electric Illuminating Co. of Boston for the 10-year period 1915-1924. This report is the most detailed and complete contribution on the incidence of disabling sickness among adult males and females that has appeared in this country and space does not permit a full summary of the results here. Briefly, it was found that there were annually 2.02 absences from work due to sickness (exclusive of accidents) among females to every absence among males after adjusting for differences in the age distribution of the two sexes and that the excess of the female rate was greatest in the younger ages. All of the cases of sickness were reported upon by the company nurses. The ratios according to age are as follows:

Edison Electric Illuminating Co. of Boston

Age group	Ratio of female sickness rate to male rate
All ages	2.02
15-24	2.23
25-34	2.27
35-44	1.70
45-54	1.29
55+	1.49

The fact that the sex ratios shown by these two important industrial experiences are higher than similar ratios based upon fairly comparable records for a general population group invites inquiry as to whether or not the female morbidity rate is increased by factory employment. Our data do not lend themselves to an inquiry that demands the consideration of the many factors involved for which we lack the essential information, and no conclusion or suggestion is offered on this point. A comparison of the sex ratios for the Hagerstown population of working ages and the Edison Co. employees with respect to certain groups of diseases and conditions is of interest, however, in this connection. This comparison is given in the following table:

Ratios of female sickness rate to male rate in two populations, for certain disease groups

Cause (Numbers in parentheses refer to those given in the International List of Causes of Death)	For general population 15-64 years of age in Hagerstown, Md. 1921-1924	For employees of Edison Co., Boston, 1915-1924
All causes	1.79	1.93
Epidemic, endemic, infectious (1-42, excl. 11, 31)	2.08	1.39
General (43-69)	1.98	.80
Nervous system (70-84)	4.94	4.42
Circulatory system (87-96)	1.94	.82
Respiratory (11, 31, 97-107, 109)	1.51	1.74
Digestive (108, 110-127)	2.08	1.80
Nonvenereal diseases of genito-urinary system (128-140, 142)	3.02	.89
Skin (151-154)	.94	1.31
Bones and organs of locomotion (155-158)	1.33	.60

Upon the assumption that the two sets of data are roughly comparable, the following observations suggest themselves:

The low ratio of the female sickness rate to the male rate in the Edison group for general diseases, diseases of the circulatory system, nonvenereal diseases of the genito-urinary system, and diseases and defects of the bones and organs of locomotion, as compared with the Hagerstown population, may be interpreted, perhaps, as reflecting a greater degree of selection (whether natural or deliberate or both) of females for industrial employment than of males. This would suggest itself as the obvious reason for the low illness sex ratio for nonvenereal diseases and conditions of the genito-urinary system among the employed persons, and the lack of occupations for women who are crippled may be a reason for the low illness sex ratio for diseases and defects of the bones and organs of locomotion among the employed persons. Whether or not the low ratios for general diseases and diseases of the circulatory system reflect a similar fact is an interesting question upon which our data can contribute no direct information.

Again, in view of the facts that the Hagerstown female-male ratios for sickness are magnified by reason of the method of securing the record and that the Edison ratios are probably lessened by reason of the factor of selection, the suggestion presents itself that the ratio of the female sickness rate to that of the male rate is higher for a group of factory workers than for a general population group. For the Hagerstown adult group a ratio of about 1.3 to 1 was found when the same method of reporting was applied to both sexes. For the Edison group the ratio was found to be nearly 2 to 1. This indication that females are less able to withstand factory work can not be accepted as worth more than a mere suggestion for further inquiry, although it is in line with certain studies of mortality records.

European health insurance records contain a large amount of material bearing upon the incidence of disabling sickness among males and females. Probably the most extensive and well-known experience is that of the Leipzig Local Sick Fund (7). From the records for the period 1887–1905 for compulsory members we have compiled annual rates for disabilities, exclusive of industrial but inclusive of nonindustrial accidents, lasting longer than one day, among males and females, and have found the following ratios according to age groups:

Leipzig local sick fund, 1887–1905

Age group	Ratio of female sickness rate to male rate	Age group	Ratio of female sickness rate to male rate
15-19	1.05	50-54	1.10
20-24	1.24	55-59	.93
25-29	1.44	60-64	.87
30-34	1.44	65-69	.86
35-39	1.40	70-74	.82
40-44	1.28	75+	.75
45-49	1.20		

Since this experience covers 952,674 males and 259,582 females "under observation for one year" and, except for females in the age groups over 65 years of age and for males 75 years of age, includes more than 1,500 persons in every age group, we have a fairly dependable series of ratios for our general purpose. They corroborate what our more fragmentary material points to—that in the younger adult ages the female rate is in excess of the male and that this excess diminishes as middle age approaches. The Leipzig experience carries the record farther and shows that in the older ages the female rate is actually lower than that of males, a result which is indicated by the more favorable death rate among females in this period of life when illness in general is most fatal.

Finally, some reference may be made to results of studies upon the *prevalence* of sickness as ascertained by an inquiry made upon a given day.

Canvasses of seven cotton-mill villages in South Carolina in 1916 (4) showed that the ratios of the adult female rate for disabling sickness (exclusive of confinements) to that of males were as follows:

Seven cotton-mill villages in South Carolina, 1916

Age group	Ratio of female sickness rate [1] to male rate
15-24	1.88
25-34	2.13
35-44	1.15
45-54	1.46
55+	.75

[1] Exclusive of confinements.

The population observed included persons not at work as well as wage earners, but it is very probable that sex ratios for adults based on these canvasses are affected by a greater frequency for illnesses among females to be reported by themselves than among males. We have no way of estimating the effect of this procedure upon these prevalence rates, however. From the extensive sickness surveys made by the Metropolitan Life Insurance Co. (8) in 1915-1917 we have computed the ratios below. The surveys included 376,573 white persons over 14 years of age, and the sicknesses observed were those which were disabling and only those existing on the day of the visit.

Sickness surveys by the Metropolitan Life Insurance Co., 1915-1917

Age group	Ratio of female sickness rate to male rate	
	All areas	North Carolina areas
15-24	1.17	1.46
25-34	1.29	1.66
35-44	1.10	1.81
45-54	.85	1.43
55-64	.79	1.16
65+	.82	.70

The gross results of the Metropolitan surveys agree in a general way with the much smaller experience in the seven South Carolina cotton-mill villages which has just been given. When, however, the Metropolitan surveys of white persons in certain areas in North Carolina are compared with our South Carolina cotton-mill village surveys, the two results are not dissimilar.

This prompts the general observation, which has been frequently suggested to us by a scrutiny of male and female morbidity as well as mortality rates, that the ratios of the incidence or the prevalence of sickness in one sex to that in the other is determined to a considerable extent by environmental as well as by physiological factors.

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EXTRAORDINARY SESSION OF THE PERMANENT COMMITTEE OF THE INTERNATIONAL OFFICE, APRIL-MAY, 1927[1]

The Permanent Committee of the International Office of Public Hygiene held its extraordinary session of 1927 from April 25 to May 2, 1927, at Paris.

There were present: Messrs. Velghe (Belgium), president; Madsen (Denmark); Pulido (Spain); Taliaferro Clark (United States of America); Barrère (France); Duchêne (French West Africa); Audibert (French Indo-China); G. S. Buchanan (Great Britain); J. D. Graham (British India); C. L. Park (Australia); S. P. James (New Zealand); P. G. Stock (Union of South Africa); Matarangas (Greece); Lutrario (Italy); Mitsuzo Tsurumi (Japan); Praum (Luxemburg); Colombani (Morocco); Roussel-Despierres (Monaco); H. M. Gram (Norway); N. M. Josephus Jitta (Netherlands); W. de Vogel (Netherlands Indies); Mimbela (Peru); Djavad Asthiany (Persia); W. Chodzko (Poland); Ricardo Jorge (Portugal); Ionesco-Mihaiesti (Rumania); Yoannovitch (State of Serbia, Croatia, and Slovenia); C. Kling (Sweden); H. Carrière (Switzerland); L. Prochazka (Czechoslovakia); De Navailles (Tunisia); Galib Ata (Turkey); Syssine (Union of Socialist Soviet Republics); also, Mr. Pottevin, director of the International Office of Public Hygiene.

[1] Translation of report furnished by the Office International d'hygiène Publique.

I

A great part of the work of the committee was devoted to questions relating to the *application of the International Sanitary Convention of June 21, 1926.*

Article 7 of this convention provides that, in the exercise of the powers conferred upon it, the office may conclude agreements with the League of Nations and, in particular, with its Singapore bureau, with the Pan American Sanitary Bureau, and with other similar organizations. The committee has prepared the text of two agreements with the League of Nations, one of which considers the making use of the regional bureaus of the league and of the publications issued by the Service of Epidemiological Intelligence, the other, the utilization of the regional bureau for the Far East at Singapore. As concerns the Pan American Sanitary Bureau, conferences have been entered into between the director of the bureau and the international office. These will be continued, and a plan will be presented to the committee at its sessions next November.

The committee also considered, to be taken up again in November, a plan of agreement with the Sanitary, Maritime, and Quarantine Council of Egypt.

Article 28 of the Convention of 1926 provides that the International Office of Public Hygiene shall provide the model of a document to be used as *certificate of deratization or exemption from deratization.* This model has been prepared. It will be communicated at the proper time to the Governments interested.

The committee has given its opinion, on request of the International Hydrographic Bureau, on the questions of *signals* designed to meet the needs of the maritime sanitary services. It has also examined and referred for decision at its next session the question of utilizing *wireless telegraphy* for the needs of these services.

The International Sanitary Conference of Paris of 1926 had referred to the office the study of questions relating to physicians *on board* [vessels]—their qualifications, powers, and the facilities to be extended to vessels having on board a duly qualified physician. To these questions is allied the question of *medical instruction for the use of vessels not having a physician on board.*

As to the first question, the numerous communications received have revealed the manner in which it has been decided or considered in the several countries: Italy, Argentine Republic, United States of America, Spain, Australia, Sweden, Union of Socialist Soviet Republics, Kingdom of the Serbs, Croats, and Slovenes, Greece, Japan, the Netherlands, England, and Peru. The sum of the information thus collected indicates that opinion and practice are still somewhat divergent, but that there exists everywhere the same desire for cooperation in measures securing the appointment of physicians to

serve on board who shall be specially qualified in view of their duties and the responsibilities involved in a moral and material position conformable with the qualifications required of them. These physicians should become, if not functionaries, at least highly useful auxiliaries of the sanitary authority in all countries. The study of the question will be continued.

As regards medical instruction designed for vessels not having a ship's doctor on board, the office will continue the study of the subject in connection with the League of Red Cross Societies, which organization is interested in this matter through its sailors' welfare committee.

II

In applying article 8 of the *Opium Convention of 1925*, the health committee of the League of Nations has submitted for opinion, to the permanent committee of the International Office, the propositions formulated by 13 governments concerning the preparations to be withdrawn from the application of this convention. The committee has not thought fit to decide categorically, believing that each preparation should be examined separately. It has named a commission, composed of pharmacological experts, directed to prepare a technical report which will be examined at the November session.

III

The greater part of the communications received on the subjects considered in the course of the session have been or will be published in the *Bulletin*.

Regulation of therapeutic products.—In Italy, the decree of November 25, 1926, organized the administration of the inspection of biologic products (serums, vaccines, etc.), before there should be obtained for them the authorization (already required by previous law) in view of sale. While they are in the experimental stage, said products may not be used on man except in certain establishments which must be institutions for public welfare and authorized by the prefect. The experimenter must, in addition, make a preliminary declaration to the chief of administration with which the institute is connected, or to the provincial physician.

The preparation of autogenous vaccines is allowed only by institutes, hospitals, and public laboratories which are given specific authority by the Minister of the Interior.

In England, the requirements already established (law of August 7, 1925), and previously described in the *Bulletin*, have been the subject of a regulation of procedure prepared by the special committee the creation of which had been provided for. This regulation, which is to become effective August 6, next, is still in the probationary status. The first part concerns matters of administration; the second relates

to technical matters—standards of quality, purity, etc. The regulation includes not only bacterial serums and vaccines, but also vaccinal lymph, insulin, and preparations of the pituitary gland.

In the Netherlands, a royal decree for the application of the recent law concerning serums, vaccines, and biologic products is in preparation. It does not include autogenous vaccines.

In Switzerland, also, a regulation is in preparation.

The fauna of the rodents and their cutaneous parasites which intervene in the propagation of plague.—This question has been made the subject of a number of communications and of a report summing up the compilation of data received up to the present time, which will be published in the next *Bulletin*. The report stresses the rôle played in the general epidemiology of plague by "wild" plague, which occurs in the desert. Of this there exist four well-known foci—one in Africa, one in Europe, one in Asia, and one in America—and in each focus the disease is conveyed by a different species of rodent: Gerbille, spermophile, tarabagan, California [ground] squirrel. Living outside the habitations of man, these animals have been infected primarily by port rats, through the intermediary of other species, which themselves aid in the production of human plague.

A program of inquiry as to fleas on rats is in progress in the United States of America. In South Africa, it is stated, fleas kept at a distance from their host, the gerbille, in a subterranean nest of that rodent, may remain alive and infectious for at least 60 days. In British India important researches are in progress concerning the epidemiology of plague and antiplague vaccination. At the present time it is proved that if *P. cheopis* is the principal agent in the propagation of plague, *P. astia* also may intervene equally; it shows itself capable in transmitting the infection under experimental conditions.

The duration of the survival of *P. cheopis* and *P. astia*, away from their host, is the subject of a special study. It has been already noted that the females of the two species have a longer life than the males, and that the females of *astia* have a shorter life than the females of *cheopis*.

Researches carried on in British India on the epidemiology of cholera.—Important communications received have been retained to be completed and to provide the subject for discussion at the next session.

Yellow fever.—There occurred in French West Africa, toward the end of the winter season, many outbreaks of yellow fever, generally unrelated, coincident with a recrudescence of the disease in the Gold Coast and Nigeria. Communications relative to these amaryllic manifestations bear witness again to the efficacy of the prophylactic measures.

General paralysis and its treatment by malaria.—In the United States of America the treatment by malaria is at present in favor, by reason of the many favorable results obtained and the willingness with which the patients lend themselves to the treatment.

In Holland, where malarial inoculation is generally performed by subcutaneous injection of infected human blood, the results, which have not been absolutely confirmed, are on the whole favorable. But accidents have occurred which demand prudent action and the close following up of the patients under treatment.

In England there is a preference for inducing infection by the sting of infected mosquitoes. Statistics bearing on 479 cases treated in 1926 indicate 12.8 per cent of cures—so far as we may employ this term after a relatively brief abeyance of symptoms—and 40.2 per cent showing improvement. For the years 1925 and 1926 the number of cases treated rose to 921, of which more than 20 per cent were discharged from the institutions as cured (10 per cent about) or improved. There were also some accidents, showing that it is important that the patients be carefully observed and treated.

Observations made in the different regions of Italy would tend to show that, in the great majority of cases where malaria is prevalent, general paralysis is relatively rare, and vice versa. Analogous conditions were stated for Turkey.

Mental sequellae of lethargic encephalitis.—Information obtained regarding the forms observed and the measures considered in France, England, the United States of America, Sweden, Czechoslovakia, the Kingdom of the Serbs, Croats, and Slovenes, the Argentine Republic, and Portugal—the details of which are published in the *Bulletin* for June, 1927—show that everywhere the data regarding the problem are identical and that the solution is likewise difficult. It is very hard to determine what should be done with children who are not insane but who are wayward and morally delinquent to a degree which makes them incompatible with family and social life. Nowhere has there been found a definite and satisfactory solution.

Post-vaccinal encephalitis.—Two cases of post-vaccinal encephalitis have been notified in Poland; they are unusual in that they present sequellae of hyperkinetic form which is not generally seen. The note relative to these cases will be published in the *Bulletin*.

The data collected regarding post-vaccinal encephalitis does not, in general, point to the existence of a special virus, different from vaccinal virus, nor to any particular technique of vaccination. In the United States, however, where there has not so far been observed any case of post-vaccinal encephalitis, there has been adopted a special vaccination technique. This will be the subject of a communication and a discussion at the November session.

Epidemiology and prophylaxis of scarlet fever.—Information has been received and will be published on the following points: The regulations in force in the United States of America for the production of toxin and antitoxin of the streptococcus, the Dick reaction, and immunization.—The epidemic which has prevailed since the war in the Kingdom of the Serbs, Croats, and Slovenes, and which, having reached its peak in 1921, has since been on the decline.—The experimental studies carried out at the hospital for infectious diseases at Dairen, with the result that reactions have been obtained resembling the Dick reactions with the staphylococcus isolated from cases of scarlatina.

Diseases of the Mediterranean group.—On this subject communications have been received concerning the following: The work of the commission on kala-azar in British India—Kala-azar in Greece, where it prevails principally among children under 14 years of age and in mountain regions. Treatments by injections of atoxyl or of salvarsan have not given favorable results.—Undulant fever in the United States of America.—Undulant fever in Spain.

Other communications concerning the following: Fight against *cancer* in the United States of America, in Italy, in the Netherlands Indies, where among the "tropical races" are found all the known tumors in as great numbers as in comparable groups in Europe.—*Recurrent fever in Spain.*—*Paludism* in Greece, where the intensified campaign of recent years has produced striking results.—The epidemiologic status of the Union of Socialist Soviet Republics.

Protection of infants and children in Czechoslovakia was made the subject of a communication, the discussion of which, together with that of maternity and infancy in the different countries, was deferred until the next session.

On the other hand, the attention of the committee was called to the possibility of working out international agreements in the field of the struggle against the *social diseases.* The committee took the subject under consideration and decided that a report should be presented in regard to this matter at its November session.

Finally, the committee decided to institute an inquiry into the regulations existing in the different countries regarding *the use of antiseptics in alimentary products carried as provisions on board vessels.*

PUBLIC HEALTH ENGINEERING ABSTRACTS

The Work of the Veterinary Officer from the Pampas of Argentina to Smithfield Market. Lieut. Col. T. Dunlop Young, veterinary inspector, city of London, *Journal of the Royal Sanitary Institute*, vol. 47, No. 8, February, 1927, pp. 500–505. (Abstract by H. B. Hommon.)

Following a very interesting history of the production of cattle and sheep in Argentina, it is stated that the veterinary officer in Argentina as in all the coun-

tries of the world, except in England (there are a few exceptions), is entirely responsible for: (1) Freedom of disease of all animals and their food products entering the country; (2) control of the health of animals in the country and the eradication of disease; (3) antemortem examination of all animals intended for slaughter for human food; (4) post-mortem examination of all animals slaughtered for human food, the organs, all animal products, the abattoirs, markets, railway wagons and ships used for conveying animals, cold-storage transporting barges, meat holds of seagoing ships, and the purity of water supply used by abattoirs and factories; (5) the health of cows and purity of the milk supply; (6) inspection of fish and fish markets; (7) commercial economics in relation to live animals and the meat industry.

The most common diseases observed in abattoirs are: In cattle—tuberculosis, actinomycosis, actinobacillosis, and parasitic diseases; in sheep—caseous lymphadenitis and parasitic diseases; in pigs—tuberculosis, cysticercus cellulosae, and trichina.

The Argentine Government, like the Australian, New Zealand, and United States authorities, has stationed in England a veterinary representative attached to the legation, whose duty it is to watch the condition of the meat on its arrival, report defects, suggest any improvements, detect any unsound meat that has escaped the observations of the Argentine inspectors, and generally advise his department.

The Practical Sterilization of Milk Bottles by Chemical Disinfection. Milton E. Parker. *Public Health News*, Department of Health of State of New Jersey, vol. 11, No. 12, November, 1926, pp. 296-303. (Abstract by W. W. White.)

The best method of chemical disinfection consists of the use of an automatic bottle cleaner with three soaking compartments containing detergent solutions with alkalinities of 4 and 4.5 per cent (as NaOH) in the first two compartments and clean water in the third, at temperatures of 120°, 160°, and 120° F. This was timed for a 4-minute exposure and killed all *B. coli* and maintained proper caustic strength of solutions during cleansing of approximately 15,000 milk bottles. From a number of tests it was determined a 5 per cent solution of NaOH at 100° F. would destroy *B. coli* in two minutes. Na_2CO_3 was not as efficient germicidally as NaOH used alone or in combination with Na_2CO_3.

Sodium hydroxide does not destroy tubercle bacilli, but the temperature of 160° F. for four minutes in second compartment destroys those exposed.

Standard Milk Ordinance Results in Fourteen Alabama Towns. Leslie C. Frank, S. W. Welch, and C. A. Abele. *Southern Medical Journal*,[1] vol. 20, No. 3, March, 1927, pp. 233–240. (Abstract by H. A. Whittaker.)

The authors have summarized the results obtained in 14 Alabama towns in which the standard milk ordinance of the United States Public Health Service has been in force. They state in the conclusion of the article that they believe that the standard ordinance has materially helped to bring about the following observed results in these 14 towns: (1) A marked improvement in the quality of the retail raw-milk supplies, the retail raw-milk rating increasing from 43.9 to 94.3 per cent, a percentage improvement of 115; (2) a marked improvement in the quality of the raw milk delivered to Pasteurization plants, the raw milk to plants rating increasing from 46.2 to 90.8 per cent, a percentage improvement of 97; (3) a marked improvement in the care with which the Pasteurization process is applied, the Pasteurization process rating increasing from 22.2 to 85.8 per cent, a percentage increase of 286; (4) an increase in the percentage of milk Pasteurized, the percentage for the group of towns as a whole increasing from 6.9 to 21.6 per cent, and the number of towns provided with Pasteurized milk increasing from three to nine, five of these now having over 50 per cent of the

[1] Editorial Note: See also Public Health Reports, vol. 42, No. 10, March 11, 1927.

milk Pasteurized; (5) a marked increase in the general milk sanitation rating, which summarizes the combined effect of the three specific ratings and of the percentage of milk Pasteurized. The general rating of the group of 14 communities has increased from 23.2 to 56.1 per cent, a percentage improvement of 142; (6) a marked increase in the consumption of market milk, the combined consumption having increased from 6,533 gallons per day to 12,413 gallons per day, representing a percentage increase of 90.

Further Studies on the Importance of Milk and Milk Products as a Factor in the Causation of Outbreaks of Disease in the United States. Charles Armstrong, surgeon, and Thomas Parran, jr., surgeon, United States Public Health Service. Supplement No. 62 to the PUBLIC HEALTH REPORTS. 81 pages. (Abstract by Arthur P. Miller.)

This study covering a period of 19 years is a valuable contribution to the knowledge concerning milk and milk products as causative agents of disease.

Prior to 1908, 179 milk-borne epidemics were tabulated by various authors, and this compilation increases the number by 612. Of the latter number, 179 outbreaks were attributed to raw milk, 29 to Pasteurized, and 3 to certified, while in 356 the character of the incriminated supply was not given. Milk products took a part in causing epidemics, as 36 outbreaks were attributed to ice cream; 3 to butter, and 4 to cheese.

The case and the death records in these epidemics are incomplete, but such data as could be procured showed 42,637 cases and 410 deaths. An encouraging sign is found in the decrease of the reported epidemics since 1914. From 1881 to 1914, the number was increasing.

Typhoid fever epidemics are most frequently caused by typhoid carriers. Ranking next in importance as an agent is the active case, and following that comes the exchange of infected milk bottles. The outbreaks attributed to carriers reached their greatest incidence in August, while for those caused by active carriers the highest occurrence was in September. The prevalence of milk-borne typhoid fever was markedly high in August and September.

Sixty-six pages are devoted to the tabulation of data on these epidemics.

The Purification of Skim Milk Solutions on a Lath Filter. Max Levine, G. W. Burke, and C. S. Linton. Bulletin 81, Engineering Experiment Station, Iowa State College, Ames, Iowa, vol. 25, No. 18, September 29, 1926, pp. 1–30. (Abstract by A. S. Bedell.)

"The problem of purifying creamery wastes resolves itself into developing means of destroying milk sugar without acid production." Anaerobic methods of treatment develop inhibitory acidities and disagreeable odors. Activated sludge methods are costly and do not produce entirely satisfactory effluents. For small creameries especially, lath filters seem eminently practical and produce very satisfactory results according to these experiments which extended over a period of three months.

"In these experiments a small lath filter was employed. It consisted of six tiers of laths 2 feet square and 1 foot deep, with 4-inch spaces between the tiers to permit sampling at the various depths. Various dilutions of skim milk (0.5 to 1.5 per cent) were applied at rates of 1,125,000 and 2,250,000 gallons per acre per day for 10 to 14 hours daily."

Results for the three dilutions and two rates of filtration: Allowing for mineral solids in the diluent the filter removed from 63–75 per cent of the milk solids principally in the upper 3 feet of the filter. The reduction in oxygen-consumed constituents was from 75.1–87.3 per cent, and the elimination took place largely in upper 3 feet of filter. Ammonification was most marked in the upper layers of the filter. Nitrites rose quickly to a maximum in the third to fifth foot and then decreased. Nitrite formation was markedly retarded by increasing the

concentration or rate of filtration. A distinct reduction in nitrates occurred in the first foot of filter and rose rapidly through the remainder of the filter. Although based on few data, the observed relationships between concentration of waste, rate of treatment, and nitrogen point to a direct mathematical relationship. High nitrates were accompanied by high relative stabilities and, with 1 per cent solution, the effluent from the fourth foot of filter gave relative stabilities of 85–90 per cent. Raw wastes were slightly acid (pH 6.6–6.9) and fresh effluents were distinctly alkaline (pH 7.7–7.9). Anaerobic storage of raw wastes for two days at 20° C. increased acidity (pH 6.4–5.2), while effluents on storage remained alkaline (pH 7.4–7.6).

The pamphlet has charts and tables and the appendix contains tables of original data of seven series of experiments.

Public Health Aspects of Food Preservation. Carl R. Fellers. *American Journal of Public Health*, vol. 17, No. 5, May, 1927, pp. 470–475. (Abstract by D. W. Evans.)

In this article the author mentions the various methods of food preservation, some of their defects, and their effect on public health. He has summarized it in few words, as follows:

The principal methods of food preservation are canning, pasteurizing, drying, smoking, cold storage, freezing, use of salt, vinegar, sugar, chemical preservatives, fermentation, mechanical agents, and combinations of these. The principle of using sound, fresh, and clean raw products is essential to success After the process all preserved foods must again be protected against extraneous contamination. All empty containers should be thoroughly cleaned before packing.

Occupational accidents, dermatoses, and infections due to handling certain foods, and nonenforcement of the 8-hour laws for women in canneries are additional public health phases of the preserving industry. The presence of thermostable toxins of the paratyphoid-enteritidis group in canned foods has been reported, but their seriousness has not been established. Many decomposed products, aside from being offensive, do not have the public health significance attributed to them. Researches have proved that the vitamins are not greatly injured in the process of canning foods. Canning guides, bulletins, circulars, and receipts distributed by various agencies contain many erroneous statements and faulty methods which have been responsible for several outbreaks of botulism. Accurate and safe directions should be prepared by State colleges or similar agencies. Adulteration of canned, dried, or smoked food is of minor significance from a public health standpoint.

Tubercle Bacilli in the Raw Milk of the Chicago Dairy District. Fred O. Tonney, John L. White, and T. F. Danforth. *American Journal of Public Health*, vol. 17, No. 5, May, 1927, pp. 491–493. (Abstract by Dr. P. R. Carter.)

A survey of the raw milk supply of Chicago was made during the years 1923, 1924, and 1925 to determine the occurrence of bovine tubercle bacilli. A chronological table (1893–1925) showing the incidence of tubercle bacilli in market milk is given in this article. The methods used in conducting the experiment are outlined. The investigators summarized their work as follows: (1) of a series of 258 samples of raw milk destined for the Chicago market, 9, or 3.5 per cent, were found to contain living virulent tubercle bacilli of the bovine type; (2) of 73 samples of similar raw milk collected in one county of the Chicago dairy district, 5, or 6.8 per cent, were found to be actively tuberculous; (3) an estimate, based on these experimental data, of the amount of tuberculous milk sent to pasteurizing plants for the Chicago market indicates that, in the three years prior to January 1, 1926, approximately 43,000 quarts per day, or over 15,000,000 quarts per annum, contained living tubercle bacilli; (4) a similar estimate applied to the largest

producing dairy county of the district indicates that approximately 17,000 quarts per day, or more than 6,250,000 quarts per annum from this one county, were tuberculous in the same period; (5) consideration of these and other facts led to the passage of an ordinance requiring that all milk sold in Chicago after April 1, 1926, be obtained from nontuberculous cows.

Report and Conclusions of the First Subcommittee on Plague Epidemiology. Anon. *Bulletin Mensuel*, Office International d'hygiène Publique, Paris, vol. 18, No. 8, August, 1926, pp. 875–877. (Abstract by W. H. W. Komp.)

The International Sanitary Conference held in Paris in 1926 to revise the International Sanitary Convention of 1912, appointed a subcommittee on plague epidemiology. The conclusions of this subcommittee are as follows: (1) The incubation period of human plague is ordinarily not more than six days. The usual incubation period of human pneumonic plague is three or four days, exceptionally as long as eight days; (2) a patient with bubonic plague is not dangerous to others, except in cases of secondary pneumonia, if he is rid of all piercing and sucking ectoparasites, and kept free from them, especially of fleas. On the contrary, the pneumonic plague patient is extremely dangerous to all who attend him. The expectorations contain great numbers of plague bacilli which may infect contacts by way of the skin, the mucous membranes, especially those of the eye or nose, or by way of the respiratory passages; (3) contacts with plague patients should be considered suspects for a period of six days; (4) the embarkation of plague-infected rats on board ship is the principal danger in the spread of plague. Rodent plague may exist unperceived. All measures, therefore, to suppress the rat population of ships, in ports and localities exposed to the importation of plague, should be considered most efficacious in preventing the diffusion of the disease; (5) plague can not be transmitted by fomites. Merchandise or cargo are dangerous only if they shelter rats or fleas infected with plague.

International Health Year Book, 1925. Report of the League of Nations Health Organization. Plague. (Abstract by A. L. Dopmeyer.)

Austria.—On February 4, 1925, a federal law was passed creating a legal basis on which authorities can take measures for the systematic extermination of rats. (No mention is made as to whether any measures for the ratproofing of buildings are included.)

Bulgaria.—Two disinfection stations were established, one at the Port of Burgas and one at the State Hospital of Plevna. The adoption of hydrocyanic acid gas for the destruction of rats and insects is under consideration.

No cases of plague or cholera occurred in 1925.

Netherlands.—A campaign for the use of public funds for the destruction of rats is being carried on by the press.

Union of Socialist Soviet Republics.—There were two districts still containing plague centers in 1925. In one district there were 253 cases and 185 deaths in 1925. No cases were imported through the seaports and plague did not spread beyond these certain districts.

The principal centers of antiplague work are in the southeastern district of European Russia. There are 9 laboratories, 10 dispensaries, and 12 survey brigades. These brigades carry out investigations concerning the rodents in the Steppes, and take whatever measures are necessary for their destruction. An antiplague pan-Russian conference met in 1925. There is a lack of sufficient disinfecting appliances. The public health commissariat recently drafted regulations requiring local health organizations in the rural districts to build special huts for patients suffering from infectious diseases, but the regulations are difficult to enforce.

How do Pipe Metals Affect Water? H. W. Clark, Chief Chemist, Massachusetts Department of Public Health. *Water Works Engineering*, vol. 80, No. 9, April 27, 1927, pp. 539–540 and 561–562. (Abstract by W. L. Havens.)

This article contains excerpts from a paper presented before the March, 1926, meeting of the New England Water Works Association at Boston. The subject of the article is "Corrosion," which is explained as being due to free oxygen. Water contains hydrogen ions and hydroxyl ions charged positively and negatively, respectively, and in electrical equilibrium. The immersion of the metal disturbs this equilibrium by adding positive ions of the metal which liberate the hydrogen to form a coating over the metal. When free oxygen is present it combines with the hydrogen and thus exposes the metal from which ions go into solution. This cycle continued its corrosion. Carbonates in the water incrust the metal and protect it, but carbonic acid prevents the coating and so contributes to corrosion. Carbonic acid in the absence of free oxygen is practically negative in corrosive effect. Experiments with 23 corrosive ground waters suggested a CO_2 content of 1.7 parts per 100,000 as a critical value, waters showing more carbonic acid giving trouble from corrosion. Extensive data are given concerning experiments with lead, copper, brass, and zinc. This is a valuable paper, but the data are too numerous for abstracting

Preliminary Sedimentation of Real Value. Frank Bachmann. *Water Works Engineering*, vol. 80, No. 7, March 30, 1927, pp. 401–402 and 428. (Abstract by F. C. Dugan.)

The advantages of preliminary sedimentation in the treatment of turbid waters are: (1) The removal of the bulk of the turbidity, thereby reducing the load on the coagulation basins and, consequently, the cost of cleaning these basins; (2) presettling gives a water low in turbidity, which results in smoother plant operation; (3) it reduces materially the cost of chemicals for coagulation and softening; and (4) it reduces cost of water wasted with sludge, as this water has not been treated with chemicals.

Preliminary sedimentation also gives a more uniform water for coagulation. The addition of a preliminary sedimentation basin at the Waco water works resulted in reducing the cost of the chemicals on an average of 50 per cent.

DEATHS DURING WEEK ENDED JULY 16, 1927

Summary of information received by telegraph from industrial insurance companies for week ended July 16, 1927, and corresponding week of 1926. (From the Weekly Health Index July 21, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended July 16, 1927	Corresponding week 1926
Policies in force	68, 084, 353	64, 955, 791
Number of death claims	11, 947	12, 203
Death claims per 1,000 policies in force, annual rate	9. 1	9. 8

Deaths from all causes in certain large cities of the United States during the week ended July 16, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, July 21, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended July 16, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended July 16, 1927 [2]
	Total deaths	Death rate [1]		Week ended July 16, 1927	Corresponding week 1926	
Total (66 cities)	6, 354	11. 3	[3] 10 8	631	[3] 673	[4] 53
Akron	33			7	6	75
Albany [5]	37	16. 1	14. 0	3	2	63
Atlanta	73			14	12	
White	34			2	1	
Colored	39	(6)		12	11	
Baltimore [5]	197	12 5	12 0	17	25	53
White	156		10. 3	14	13	54
Colored	41	(6)	21 9	3	12	47
Birmingham	71	17 2	15 6	10	11	
White	38		9 0	4	6	
Colored	33	(6)	23 2	6	5	
Boston	161	10. 6	11. 0	21	23	59
Bridgeport	25			4	1	74
Buffalo	132	12. 5	12. 7	7	15	39
Cambridge	26	10. 9	6. 4	1	0	18
Camden	47	18. 4	7. 6	5	1	86
Canton	23	10. 6	11. 4	3	2	71
Chicago [5]	648	10 9	9 3	54	44	47
Cincinnati	113	14 3	15 7	10	16	62
Cleveland	196	10 4	8 4	20	11	53
Columbus	70	12 5	11. 5	5	4	47
Dallas	46	11. 5	13. 4	6	10	
White	34		13. 3	3	8	
Colored	12	(6)	13. 5	3	2	
Denver	68	12. 2	10. 8	6	3	
Des Moines	38	13. 3	9. 6	5	2	84
Detroit	243	9. 5	9. 5	25	37	40
Duluth	21	9 5	5. 1	1	0	22
El Paso	32	14. 6	11. 0	4	6	
Erie	19			0	3	0
Fall River [5]	30	11 8	8. 0	6	4	106
Flint	26	9 5	10. 0	4	7	65
Fort Worth	40	12. 7	6. 6	3	2	
White	33		6. 3	2	1	
Colored	7	(6)	8. 2	1	1	
Grand Rapids	31	10. 2	7. 0	0	2	0
Houston	51			7	9	
White	30			4	5	
Colored	21			3	4	

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births Cities left blank are not in the registration area for births.
[3] Data for 65 cities.
[4] Data for 61 cities.
[5] Deaths for week ended Friday, July 15, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31, Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis 11, Kansas City, Kans , 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

Deaths from all causes in certain large cities of the United States during the week ended July 16, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, July 21, 1927, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended July 16, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended July 16, 1927 [2]
	Total deaths	Death rate [1]		Week ended July 16, 1927	Corresponding week 1926	
Indianapolis	94	13.1	8.4	7	4	55
White	81		8.2	7	3	63
Colored	13	(6)	9.5	0	1	0
Jersey City	83	13.4	8.2	12	7	90
Kansas City, Kans	31	13.8	11.6	5	3	97
White	27		11.3	4	3	89
Colored	4	(6)	12.7	1	0	152
Kansas City, Mo	76	10.3	9.0	5	6	
Knoxville	33	16.9		8		
White	21			5		
Colored	12	(6)		3		
Los Angeles	239			36	12	103
Louisville	72	11.7	14.4	7	12	60
White	60		13.4	6	9	58
Colored	12	(6)	20.0	1	3	70
Lowell	17	8.0	8.7	3	4	58
Lynn	17	8.5	9.0	3	0	79
Memphis	72	21.0	22.1	7	7	
White	31		15.6	3	3	
Colored	41	(6)	34.9	4	4	
Milwaukee	95	9.3	10.5	11	19	51
Minneapolis	67	7.9	10.2	3	7	17
Nashville [5]	39	14.7	24.7	7	5	
White	30		25.5	6	4	
Colored	9	(6)	22.7	1	1	
New Bedford	21	9.2	11.3	4	6	69
New Haven	56	10.1	10.0	4	2	56
New Orleans	163	20.0	17.8	22	13	
White	93		14.5	10	9	
Colored	70	(6)	27.3	12	4	
New York	1,222 [4]	10.7	10.5	125	127	52
Bronx Borough	150	8.1	8.5	22	11	70
Brooklyn Borough	401	9.2	8.5	43	42	44
Manhattan Borough	513	14.7	12.9	45	54	63
Queens Borough	117	7.5	8.4	12	15	51
Richmond Borough	41	11.5	18.2	3	5	58
Newark, N. J	77	8.6	9.0	7	10	35
Oakland	46	9.0	10.2	5	6	59
Oklahoma City	19			2	3	
Omaha	43	10.2	10.9	4	6	44
Paterson	30	10.9	12.4	4	5	71
Philadelphia	415	10.6	11.7	41	49	55
Pittsburgh	174	14.1	10.4	18	22	63
Portland, Oreg	70			8	2	84
Providence	61	11.3	10.4	5	13	42
Richmond	48	13.0	13.0	7	7	92
White	24		9.3	4	1	81
Colored	24	(6)	21.8	3	6	114
Rochester	60	9.7	10.4	9	6	76
St. Louis	184	11.4	12.5	12	22	
St. Paul	52	10.8	12.2	1	5	9
Salt Lake City [5]	16	6.1	11.0	1	2	15
San Antonio	52	12.9	11.2	12	13	
San Diego	42	19.0	9.5	4	0	85
San Francisco	125	11.3	11.9	8	4	50
Schenectady	18	10.1	10.1	3	3	90
Seattle	58			2	6	21
Somerville	17	8.7	4.7	1	0	36
Spokane	31	14.8	13.9	2	2	50
Springfield, Mass	85	12.4	8.6	3	1	46
Syracuse	43	11.4	12.7	3	5	39
Tacoma	15	7.3	12.3	1	3	24
Toledo	58	9.9	9.4	3	2	29
Trenton	27	10.3	16.3	1	6	17
Washington, D. C	138	13.3	10.7	14	15	81
White	96		7.9	4	6	34
Colored	42	(6)	18.7	10	9	184
Waterbury	26			1	2	24
Wilmington, Del	23	9.5	11.8	2	6	50
Worcester	40	10.7	8.6	2	4	24
Yonkers	22	9.6	6.7	3	1	68
Youngstown	28	8.6	12.3	6	6	84

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended July 23, 1927

DIPHTHERIA	Cases
Alabama	17
California	56
Colorado	11
Connecticut	16
Delaware	2
Florida	3
Georgia	10
Idaho	2
Illinois	106
Indiana	25
Iowa [1]	11
Kansas	5
Louisiana	12
Maine	1
Maryland [1]	32
Massachusetts	52
Michigan	58
Minnesota	20
Missouri	21
Montana	1
Nebraska	4
New Jersey	86
New York [2]	67
North Carolina	16
Oklahoma [3]	4
Oregon	8
Pennsylvania	150
Rhode Island	3
South Carolina	15
South Dakota	6
Tennessee	11
Texas	18
Utah [1]	1
Washington	3
Wisconsin	18

INFLUENZA	Cases
Alabama	15
Arkansas	3
California	6
Connecticut	2
Georgia	29
Illinois	11
Indiana	5
Kansas	5
Louisiana	10
Maryland [1]	2
Massachusetts	4
Minnesota	3
Oklahoma [3]	7
Oregon	7
South Carolina	97
Tennessee	6
Texas	11
Wisconsin	12
Wyoming	1

MEASLES	Cases
Alabama	62
Arizona	1
Arkansas	21
California	122
Colorado	13
Connecticut	21
Delaware	1
Florida	8
Georgia	25
Idaho	1
Illinois	137
Indiana	18
Iowa [1]	9
Kansas	45
Louisiana	83
Maine	48
Maryland [1]	6
Massachusetts	189
Michigan	65
Minnesota	18
Missouri	17
Montana	6

[1] Week ended Friday. [2] Exclusive of New York City. [3] Exclusive of Oklahoma City and Tulsa.

MEASLES—continued	Cases
Nebraska	12
New Jersey	12
New York [2]	212
North Carolina	356
Oklahoma [3]	29
Oregon	29
Pennsylvania	260
Rhode Island	1
South Carolina	64
South Dakota	8
Tennessee	13
Texas	11
Utah [1]	3
Vermont	25
Washington	92
Wisconsin	190
Wyoming	10

MENINGOCOCCUS MENINGITIS

California	3
Connecticut	1
Georgia	1
Illinois	5
Iowa [1]	1
Massachusetts	1
Michigan	4
Minnesota	6
Montana	3
New York [2]	2
Oklahoma [3]	2
Oregon	1
Pennsylvania	2
Tennessee	1
Wisconsin	5

POLIOMYELITIS

Alabama	1
Arizona	3
California	62
Florida	1
Georgia	2
Illinois	8
Iowa [1]	1
Kansas	2
Louisiana	5
Maryland [1]	1
Massachusetts	8
Michigan	4
Missouri	1
New Jersey	3
New Mexico	22
New York [2]	6
Oklahoma [3]	2
Pennsylvania	2
Tennessee	1
Texas	2
Utah [1]	1
Wisconsin	1

SCARLET FEVER

Alabama	6
California	69
Colorado	15
Connecticut	11
Delaware	3

SCARLET FEVER—continued	Cases
Florida	2
Georgia	5
Idaho	7
Illinois	97
Indiana	30
Iowa [1]	18
Kansas	19
Louisiana	5
Maine	24
Maryland [1]	14
Massachusetts	130
Michigan	73
Minnesota	61
Missouri	15
Montana	7
Nebraska	2
New Jersey	56
New Mexico	8
New York [2]	78
North Carolina	13
Oklahoma [3]	7
Oregon	6
Pennsylvania	190
Rhode Island	11
South Carolina	9
Tennessee	12
Texas	11
Utah [1]	8
Vermont	1
Washington	7
Wisconsin	65
Wyoming	4

SMALLPOX

Alabama	10
California	7
Colorado	2
Florida	2
Georgia	11
Idaho	7
Illinois	2
Indiana	67
Iowa [1]	14
Kansas	5
Michigan	17
Minnesota	1
Missouri	6
Montana	2
Nebraska	5
New Mexico	1
New York [2]	16
North Carolina	6
Oklahoma [3]	12
Oregon	15
Pennsylvania	4
South Carolina	8
South Dakota	5
Tennessee	9
Texas	26
Utah [1]	11
Virginia	3
Washington	10
Wisconsin	21
Wyoming	1

[1] Week ended Friday. [2] Exclusive of New York City. [3] Exclusive of Oklahoma City and Tulsa.

50830°—27——3

TYPHOID FEVER	Cases
Alabama	120
Arizona	3
Arkansas	34
California	14
Colorado	2
Connecticut	2
Florida	22
Georgia	85
Idaho	2
Illinois	31
Indiana	9
Iowa [1]	3
Kansas	16
Louisiana	46
Maine	1
Maryland [1]	14
Massachusetts	15
Michigan	11
Minnesota	3

TYPHOID FEVER—continued	Cases
Missouri	20
Montana	3
Nebraska	2
New Jersey	20
New Mexico	3
New York [2]	12
North Carolina	106
Oklahoma [3]	61
Oregon	4
Pennsylvania	33
Rhode Island	2
South Carolina	94
South Dakota	1
Tennessee	184
Texas	14
Utah [1]	3
Washington	5
Wisconsin	2

Reports for Week Ended July 16, 1927

DIPHTHERIA	Cases
District of Columbia	7
Missouri	17
INFLUENZA	
District of Columbia	1
MEASLES	
District of Columbia	2
Missouri	24
North Dakota	2

SCARLET FEVER	Cases
District of Columbia	5
Missouri	15
North Dakota	12
SMALLPOX	
District of Columbia	1
Missouri	11
North Dakota	4
TYPHOID FEVER	
District of Columbia	2
Missouri	11

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
May, 1927										
Delaware		5		1	44		0	31	0	3
June, 1927										
District of Columbia	0	54	4		15	1	0	65	30	5
Florida	3	57	60	26	200	10	3	21	165	86
Iowa	1	63			458		0	115	91	4
Louisiana	1	60	87	139	293	53	10	15	27	116
Minnesota	11	94	10		341		2	474	10	18
New Jersey	9	431	17		196		7	816	1	28
New York	23	1,875	63	21	3,609		10	2,208	34	91
North Dakota		8			117		0	89	6	2
Tennessee	7	21	59	146	197	156	5	47	54	247
West Virginia	4	43	25		564		2	115	133	46

[1] Week ended Friday. [2] Exclusive of New York City. [3] Exclusive of Oklahoma City and Tulsa.

May, 1927

	Cases
Delaware:	
Anthrax	1
Chicken pox	10
Mumps	11
Ophthalmia neonatorum	1
Whooping cough	9

June, 1927

	Cases
Anthrax:	
New York	1
Chicken pox:	
District of Columbia	52
Florida	19
Iowa	92
Louisiana	19
Minnesota	773
New Jersey	1,197
New York	2,556
North Dakota	33
Tennessee	65
West Virginia	70
Dysentery:	
Florida	7
Louisiana	37
Minnesota	3
New York	2
Tennessee	117
German measles:	
Iowa	1
New Jersey	100
New York	940
Hookworm disease:	
Louisiana	11
Lead poisoning:	
New Jersey	4
Leprosy:	
Louisiana	1
Tennessee	1
Lethargic encephalitis:	
District of Columbia	1
Louisiana	3
New York	17
Tennessee	1
Mumps:	
Florida	15
Iowa	84
Louisiana	26

June, 1927—Continued

	Cases
Mumps—Continued.	
New York	2,056
North Dakota	3
Tennessee	27
Ophthalmia neonatorum:	
Florida	1
New Jersey	3
New York	2
Paratyphoid fever:	
New York	7
Tennessee	7
Puerperal septicemia:	
New York	11
Rabies in animals:	
New York	14
Rabies in man:	
New Jersey	1
New York	1
Tennessee	3
Septic sore throat:	
New York	19
Tetanus:	
Florida	2
Louisiana	2
New York	6
Trachoma:	
New Jersey	2
North Dakota	1
Trichinosis:	
Minnesota	3
Tularaemia:	
North Dakota	3
Typhus fever:	
Florida	2
New York	2
Vincent's angina:	
New York	52
Whooping cough:	
District of Columbia	39
Florida	140
Iowa	73
Louisiana	112
Minnesota	71
New Jersey	677
New York	1,382
North Dakota	15
Tennessee	282
West Virginia	150

Number of Cases of Certain Communicable Diseases Reported for the Month of April, 1927, by State Health Officers

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Alabama	201	115	1,326	145	62	239	370	93	308
Arizona	73	13	370	17	67	4	93	3	11
Arkansas [1]									
California	2,091	493	11,250	1,057	831	154	770	47	742
Colorado	150	76	1,623	87	670	27	46	20	52
Connecticut	285	115	326	167	424	0	137	2	120
Delaware	21	7	54	9	65	0	18	1	
District of Columbia	224	111	27		91	0	116	0	47
Florida	243	87	897	66	50	307	154	76	129
Georgia	236	46	871	251	62	227	89	45	260
Idaho	57	13	462	10	115	60	6	3	26
Illinois	1,174	457	7,622	2,263	1,145	113	1,414	40	850
Indiana [1]									
Iowa	170	118	1,680	147	197	70	43	24	70
Kansas	439	48	4,613	249	470	98	185	8	286
Kentucky [2]									
Louisiana	49	113	434	64	41	25	[3] 147	73	91
Maine	124	22	673	69	144	1	56	15	124
Maryland	438	181	116	133	285	0	346	43	367
Massachusetts	971	381	1,401	1,720	2,001	0	583	26	625
Michigan	1,016	406	1,027	966	1,077	128	554	29	539
Minnesota	629	151	874		813	14	201	10	89
Mississippi	705	48	3,023	579	38	23	314	60	2,068
Missouri	373	243	1,418	517	600	121	256	16	280
Montana	114	13	169	20	287	34	33	9	26
Nebraska	252	25	1,855	256	314	124	31	6	64
Nevada [4]									
New Hampshire		11			66	0		2	
New Jersey	1,284	454	326		1,398		449	26	817
New Mexico [1]									
New York	2,698	1,092	3,584	3,646	4,747	23	1,613	71	1,110
North Carolina	498	64	4,754		84	183		11	3,087
North Dakota	28	29	628	43	327	37	16	8	
Ohio	9,841	478	878	846	1,752	170	680	45	679
Oklahoma [5]	109	92	2,000	134	258	163	84	99	141
Oregon	113	53	1,350	82	148	86	60	15	67
Pennsylvania	2,224	771	3,233	2,281	2,587	0	[3] 659	87	944
Rhode Island	54	32	20	24	106	0	39	3	31
South Carolina	539	129	833	90	26	96	263	33	944
South Dakota	80	20	1,057	40	287	42	10	1	42
Tennessee	278	50	698	118	191	100	200	60	357
Texas [1]									
Utah [2]									
Vermont	133	7	566	347	47	0	[3] 24	1	84
Virginia	727	96	3,958		154	143	[3] 126	37	1,857
Washington	493	78	2,141	517	306	201	180	16	188
West Virginia	219	77	818		195	193	71	22	302
Wisconsin	1,010	157	3,540	1,396	804	42	201	4	639
Wyoming	35	6	331	125	71	9	4	1	9

[1] Reports not received at time of going to press.
[2] Reports received weekly.
[3] Pulmonary
[4] Reports received annually.
[5] Exclusive of Oklahoma City and Tulsa.

Case Rates per 1,000 Population (Annual Basis) for the Month of April, 1927

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Alabama	0.96	0.55	6.33	0.69	0.30	1.14	1.77	0.44	1.47
Arizona	1.94	.34	9.81	.45	1 78	.11	2.47	.08	.29
Arkansas [1]									
California	5 74	1.35	30.91	2.90	2 28	.42	2.14	.13	2.04
Colorado	1.70	.86	18.39	.90	7.59	.31	.52	.23	.59
Connecticut	2.12	.86	2.42	1.24	3.15	.00	1.02	.01	.89
Delaware	1.05	.35	2.70	.45	3.25	.00	.90	.05	
District of Columbia	5.05	2.50	.61		2.05	.00	2.61	.00	1.06
Florida	2.17	.78	8.01	.59	.45	2.74	1.37	.68	1.15
Georgia	.91	.18	3.34	.96	.24	.87	.34	.17	1.00
Idaho	1.30	.30	10.53	.23	2.62	1.37	.14	.07	59
Illinois	1.96	.76	12.71	3.77	1.91	.19	2.36	.07	1.42
Indiana [1]									
Iowa	..85	.59	8.43	.74	.99	.35	22	.12	.35
Kansas	2.92	.32	30.70	1.66	3.13	.65	1 23	.05	1.90
Kentucky [2]									
Louisiana	.31	.71	2.73	.40	.26	.16	[3].92	.46	.57
Maine	1.90	.34	10.33	1.06	2.21	.02	.86	.23	1.90
Maryland	3.34	1.38	.88	1 01	2.17	.00	2.64	.33	2.80
Massachusetts	2.78	1.09	4.02	4.93	5.74	.00	1 67	.07	1.79
Michigan	2.75	1.10	2.78	2.62	2.92	.35	1.50	.08	1.46
Minnesota	2.85	.68	3.96		3 68	.06	.91	.05	.40
Mississippi	4.79	.33	20 54	3 93	.26	.16	2.13	.41	14.05
Missouri	1 29	.84	5.02	1 79	2.08	.42	.89	.06	.97
Montana	1.94	.22	2.88	.34	4.89	.58	.56	.15	.44
Nebraska	2.20	.22	16.17	2.23	2.74	1.08	.27	.05	.56
Nevada [4]									
New Hampshire		.29			1.76	.00		.05	
New Jersey	4 17	1.57	1.06		4.54		1.46	.08	2.65
New Mexico [1]									
New York	2 87	2.12	3.82	3 88	5 06	.02	1 72	.08	1 18
North Carolina	2 09	.27	19 97		.35	.77		.05	12.97
North Dakota	.53	.55	11.92	.82	6.20	.70	.30	.15	
Ohio	17 85	.87	1.59	1.53	3.18	.31	1.23	.08	1.23
Oklahoma [5]	.62	.53	11 46	.77	1 48	.93	.48	.57	.81
Oregon	1.54	.72	18 45	1.12	2.02	1.18	.82	.21	.92
Pennsylvania	2.78	.96	4 04	2.85	2.98	.00	[3].82	.11	1.18
Rhode Island	.93	.55	.35	.41	1 83	.00	.67	.05	.54
South Carolina	3.55	.85	5.49	.59	17	.63	1 73	.22	6.22
South Dakota	1.40	35	18.48	.70	5.02	.73	.17	.02	.73
Tennessee	1.36	.24	3.42	.58	.94	.49	98	.29	1.75
Texas [1]									
Utah [2]									
Vermont	4.59	.24	19.54	11.98	1.62	.00	[3].83	.03	2.90
Virginia	3.47	.46	18.92		.74	.68	[3] 60	.18	8 87
Washington	3.64	.61	16.68	4.03	2.38	1.59	1 40	.12	1.46
West Virginia	1.57	.55	5.87		1.40	1.38	.51	.16	2 17
Wisconsin	4.21	.65	14.76	5.82	3.35	.18	.84	.02	2.66
Wyoming	1.77	.30	16.71	6.31	3.58	.45	.20	.05	.45

[1] Reports not received at time of going to press.
[2] Reports received weekly.
[3] Pulmonary.
[4] Reports received annually.
[5] Exclusive of Oklahoma City and Tulsa.

RECIPROCAL NOTIFICATIONS

Notifications regarding communicable diseases sent during the month of June, 1927, to other State health departments by departments of health of certain States

Referred by—	Diphtheria	Dysentery	Malta fever	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Connecticut	1			2				
Illinois					2	2	4	
Minnesota		2	1	2	1	23	2	
New York				1			2	1

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 97 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,590,000. The estimated population of the 91 cities reporting deaths is more than 29,600,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended July 9, 1927, and July 10, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
41 States	1,188	1,048	
97 cities	719	591	609
Measles:			
40 States	3,754	6,730	
97 cities	1,153	1,815	
Poliomyelitis.			
41 States	80	39	
Scarlet fever:			
41 States	1,692	2,073	
97 cities	589	734	404
Smallpox.			
41 States	500	303	
97 cities	94	37	48
Typhoid fever.			
41 States	781	775	
97 cities	97	78	120
Deaths reported			
Influenza and pneumonia:			
91 cities	360	389	
Smallpox:			
91 cities	0	1	
Omaha	0	1	

City reports for week ended July 9, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine									
Portland	75,333	1	0	1	0	0	2	1	0
New Hampshire:									
Concord	22,546	0	0	0	0	0	1	0	0
Manchester	83,097	0	1	0	0	1	0	0	2
Vermont:									
Barre	10,008	0	0	0	0	0	0	0	0
Burlington	24,089	0	0	0	0	0	1	0	0
Massachusetts									
Boston	779,620	40	41	23	1	1	111	22	11
Fall River	128,993	0	2	2	0	0	3	0	2
Springfield	142,065	8	2	0	0	0	3	3	2
Worcester	190,757	5	2	0	0	0	1	0	1
Rhode Island									
Pawtucket	69,760	0	1	1	0	0	0	0	0
Providence	267,918	0	4	7	0	0	2	0	2
Connecticut:									
Bridgeport	(1)	1	4	2	0	0	0	0	2
Hartford	160,197	2	3	2	0	0	3	2	5
New Haven	178,927	3	1	1	0	0	3	1	1
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	12	8	7	--------	0	11	6	6
New York	5,873,356	122	168	286	11	6	39	57	63
Rochester	316,786	16	6	8	--------	0	4	2	2
Syracuse	182,003	33	4	0	--------	0	100	0	4
New Jersey:									
Camden	128,642	2	2	11	0	0	0	0	2
Newark	452,513	37	8	13	1	0	4	30	5
Trenton	132,020	0	2	1	0	0	0	0	1
Pennsylvania:									
Philadelphia	1,979,364	44	47	34	--------	1	22	60	26
Pittsburgh	631,563	39	13	39	--------	1	103	6	20
Reading	112,707	1	2	0	--------	0	29	7	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	1	5	2	0	0	3	6	5
Cleveland	936,485	30	17	35	0	0	4	37	16
Columbus	279,836	7	2	4	0	0	0	0	3
Toledo	287,380	29	4	0	1	1	9	2	4
Indiana:									
Fort Wayne	97,846	1	2	1	0	0	1	0	1
Indianapolis	358,819	7	3	2	0	0	2	10	3
South Bend	80,091	2	1	1	0	0	3	0	0
Terre Haute	71,071	0	0	0	0	0	0	0	1
Illinois:									
Chicago	2,995,239	66	62	57	1	4	41	33	23
Springfield	63,923	2	0	2	0	0	1	0	0
Michigan:									
Detroit	1,245,824	33	35	38	0	0	6	21	12
Flint	130,316	4	2	1	0	0	9	1	4
Grand Rapids	153,698	4	2	0	0	0	31	1	0

[1] No estimate made.

City reports for week ended July 9, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL—continued									
Wisconsin:									
Kenosha	50,891	2	1	0	0	0	1	4	1
Madison	46,385	1	0	0	0	0	1	1	2
Milwaukee	509,192	33	10	9	0	0	171	22	3
Racine	67,707	4	1	1	0	0	0	1	1
Superior	39,671	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	2	0	0	0	0	0	0	2
Minneapolis	425,435	78	10	6	0	0	1	0	3
St. Paul	246,001	10	9	0	0	0	4	0	5
Iowa:									
Davenport	52,469	0	1	0	0		0	3	
Sioux City	76,411		1						
Waterloo	36,771	0	0	0	0		0	0	
Missouri:									
Kansas City	367,481	5	2	1	0	0	12	1	8
St. Joseph	78,342	0	1	0	0	0	0	0	4
St. Louis	821,543	7	22	9	0	0	12	29	
North Dakota:									
Fargo	26,403	0	0	0	0	0	0	1	0
Grand Forks	14,811	0	0	0	0		0	0	
South Dakota:									
Aberdeen	15,036	2	0	0	0		0	0	
Sioux Falls	30,127	0	0	0	0		12	0	
Nebraska:									
Lincoln	60,941	2	0	1	0	0	7	4	0
Omaha	211,768	0	3	2	0	0	0	1	3
Kansas:									
Topeka	55,411	3	0	0	0	0	10	2	0
Wichita	88,367	0	0	1	0	0	4	2	1
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	0	1	2	0	0	2	0	2
Maryland:									
Baltimore	796,296	33	11	32	1	1	6	1	10
Cumberland	33,741	1	0	0	0	0	3	0	0
Frederick	12,035	0	0	1	0	0	0	0	0
District of Columbia:									
Washington	497,906	6	5	5	0	1	7	0	6
Virginia:									
Lynchburg	30,395	3	0	0	0	0	3	1	1
Norfolk	(1)	2	0	0	0	0	1	0	1
Richmond	186,403	0	1	4	0	0	13	0	1
Roanoke	58,208	2	0	0	0	0	2	0	1
West Virginia:									
Charleston	49,019	0	0	0	0	0	2	0	1
Wheeling	56,208	0	1	0	0	0	2	0	1
North Carolina:									
Raleigh	30,371	0	0	0	0	0	12	0	0
Wilmington	37,061	14	0	0	0	0	0	1	1
Winston-Salem	69,031	0	0	0	0	0	48	7	1
South Carolina:									
Charleston	73,125	0	0	0	2	0	2	0	0
Columbia	41,225	0	0	0	0		15	0	
Greenville	27,311	0	0	0	0	0	2	1	0
Georgia:									
Atlanta	(1)	1	1	2	5	0	5	1	4
Brunswick	16,809	0	0	0	0	0	0	2	0
Savannah	93,134		1						
Florida:									
Miami	69,754	0		1	1	0	3	0	3
St. Petersburg	26,847		0			0			1
Tampa	94,743	0	0	0	0	0	8	0	1

[1] No estimate made.

City reports for week ended July 9, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mump cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	0	1	0	0	0	0	2
Louisville	305,935	0	2	1	0	1	1	1	6
Tennessee:									
Memphis	174,533	0	1	0	0	0	7	1	3
Nashville	136,220	0	0	2	0	0	0	0	1
Alabama:									
Birmingham	205,670	4	1	4	1	1	7	0	4
Mobile	65,955	0	0	0	0	1	0	0	0
Montgomery	46,481	0	1	0	0	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643		0						
Little Rock	74,216	0	0	0	0	0	5	0	1
Louisiana:									
New Orleans	414,493	0	4	3	0	0	9	0	12
Shreveport	57,857	0	0	0	0	0	12	0	0
Oklahoma:									
Oklahoma City	(1)	1	1	1	0	0	0	0	2
Texas:									
Dallas	194,450	0	2	2	0		1	1	
Galveston	48,375	0	1	0	0	0	0	0	0
Houston	164,954	0	1	4	0	0	0	0	2
San Antonio	198,069	0	1	3	0		0	0	
MOUNTAIN									
Montana:									
Billings	17,971	0	0	0	0	0	0	1	1
Great Falls	29,883	0	0	0	0	0	2	0	1
Helena	12,037	2	0	0	0	0	0	0	0
Missoula	12,668	0	0	0	0	0	0	0	1
Idaho:									
Boise	23,042	0	0	0	0	0	0	0	0
Colorado:									
Denver	280,911	19	8	6		0	9	4	4
Pueblo	43,787	0	1	0	0	0	0	0	1
New Mexico:									
Albuquerque	21,000	0	0	0	0	0	2	1	0
Utah:									
Salt Lake City	130,948	21	3	6	1	0	2	1	3
Nevada:									
Reno	12,665	0	0	0	0	0	2	0	0
PACIFIC									
Washington:									
Seattle	(1)	13	4	2	0		149	3	
Spokane	108,897	20	1	0	0		1	0	
Tacoma	104,455	2	2	3	0	0	9	0	0
Oregon:									
Portland	282,383	1	5	5	0	0	30	0	1
California:									
Los Angeles	(1)	18	30	22	1	1	31	1	11
Sacramento	72,260	2	2	3	0	0	1	1	3
San Francisco	557,530	18	12	3	0	0	15	5	2

[1] No estimate made.

City reports for week ended July 9, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
NEW ENGLAND											
Maine:											
Portland	0	0	0	0	0	0	1	1	0	0	8
New Hampshire:											
Concord	0	0	0	0	0	0	0	0	0	0	7
Manchester	1	0	0	0	0	1	0	0	0	0	16
Vermont:											
Barre	0	0	0	0	0	1	0	0	0	0	2
Burlington	0	0	0	0	0	1	0	0	0	0	5
Massachusetts:											
Boston	24	34	0	0	0	16	0	2	0	16	186
Fall River	1	4	0	0	0	4	1	2	0	0	28
Springfield	2	2	0	0	0	1	0	0	0	5	32
Worcester	3	0	0	0	0	4	0	0	1	0	36
Rhode Island.											
Pawtucket	1	0	0	0	0	0	0	0	0	0	15
Providence	3	22	0	0	0	2	0	0	0	6	55
Connecticut:											
Bridgeport	3	2	0	0	0	1	0	0	0	0	27
Hartford	2	9	0	0	0	3	0	1	0	6	33
New Haven	1	2	0	0	0	0	1	0	0	--------	41
MIDDLE ATLANTIC											
New York:											
Buffalo	10	19	0	0	0	5	0	1	0	15	127
New York	68	135	0	0	0	[1] 101	19	13	1	102	1,184
Rochester	5	2	0	0	0	3	0	0	0	5	47
Syracuse	3	2	0	0	0	1	0	0	0	1	41
New Jersey:											
Camden	1	4	0	0	0	0	0	0	0	0	23
Newark	9	9	0	0	0	4	1	2	0	45	90
Trenton	1	0	0	0	0	2	0	0	0	6	23
Pennsylvania:											
Philadelphia	36	56	0	0	0	19	6	0	0	26	363
Pittsburgh	14	20	0	0	0	9	2	1	0	16	144
Reading	0	2	0	0	0	0	0	0	0	3	19
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	5	13	0	6	0	9	2	1	0	4	148
Cleveland	15	6	1	0	0	20	2	1	0	22	182
Columbus	3	5	0	0	0	7	0	0	0	15	69
Toledo	5	4	1	0	0	6	0	0	0	19	66
Indiana:											
Fort Wayne	0	1	0	0	0	0	0	0	0	3	29
Indianapolis	3	1	3	5	0	4	1	1	0	8	85
South Bend	1	1	0	1	0	1	0	0	0	1	15
Terre Haute	0	0	0	0	0	0	0	0	0	0	18
Illinois:											
Chicago	40	46	0	2	0	42	4	1	3	119	575
Springfield	1	2	0	0	0	1	0	1	0	0	15
Michigan:											
Detroit	33	36	3	2	0	22	4	1	1	90	278
Flint	2	5	0	6	0	0	0	0	0	1	25
Grand Rapids	3	6	0	0	0	2	0	2	0	2	31
Wisconsin:											
Kenosha	0	0	1	0	0	0	0	0	0	0	4
Madison	0	5	0	0	0	2	0	0	1	4	15
Milwaukee	12	11	1	0	0	8	0	0	0	18	106
Racine	2	1	0	0	0	0	0	0	0	3	8
Superior	1	2	2	0	0	0	0	0	0	0	4
WEST NORTH CENTRAL											
Minnesota:											
Duluth	3	1	1	0	0	2	0	2	0	5	21
Minneapolis	13	17	4	0	0	3	1	1	0	2	67
St. Paul	9	7	2	0	0	3	1	1	0	6	53

[1] Pulmonary tuberculosis only.

City reports for week ended July 9, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
WEST NORTH CENTRAL—con.											
Iowa											
Davenport	0	0	1	0	......	......	0	0	......	0	......
Sioux City	1	......	0	......	......	......	0	......	......	......	......
Waterloo	0	0	0	0	......	......	0	0	......	1	......
Missouri:											
Kansas City	2	5	0	1	0	11	1	0	0	7	88
St. Joseph	0	1	0	14	0	0	0	0	0	0	25
St. Louis	9	11	1	1	0	7	5	0	0	35	174
North Dakota:											
Fargo	0	1	0	0	0	0	0	0	0	0	9
Grand Forks	0	1	1	0	......	......	0	0	......	0	......
South Dakota:											
Aberdeen	0	0	0	0	......	......	0	0	......	3	......
Sioux Falls	0	1	0	0	......	......	0	0	......	0	......
Nebraska:											
Lincoln	0	0	0	1	0	0	0	0	0	7	11
Omaha	0	2	3	0	0	0	0	0	0	0	35
Kansas:											
Topeka	0	0	1	0	0	1	2	0	0	22	12
Wichita	1	1	2	0	0	0	0	1	0	16	19
SOUTH ATLANTIC											
Delaware:											
Wilmington	1	2	0	0	0	1	0	0	0	0	26
Maryland:											
Baltimore	9	8	0	0	0	14	5	1	0	50	187
Cumberland	0	0	0	0	0	0	0	0	0	0	12
Frederick	0	0	0	0	0	0	0	0	0	0	4
District of Col.:											
Washington	6	11	0	9	0	15	3	1	0	17	116
Virginia:											
Lynchburg	0	1	0	0	0	0	0	0	0	3	12
Norfolk	0	0	0	0	0	2	1	1	0	7	......
Richmond	1	1	0	0	0	5	2	0	0	5	37
Roanoke	0	0	0	0	0	1	1	0	0	0	14
West Virginia:											
Charleston	0	1	0	0	0	3	1	0	0	0	16
Wheeling	1	2	0	0	0	0	1	0	0	2	14
North Carolina:											
Raleigh	0	0	0	0	0	3	1	0	1	3	18
Wilmington	0	0	0	0	0	2	0	0	0	1	9
Winston-Salem	0	0	1	0	0	2	2	0	0	12	20
South Carolina:											
Charleston	0	0	0	1	0	4	2	0	0	2	23
Columbia	0	0	0	0	0	1	2	2	0	13	9
Greenville	0	0	0	0	0	0	1	0	0	1	3
Georgia:											
Atlanta	2	3	3	3	0	5	3	13	3	8	81
Brunswick	0	0	0	0	0	2	0	0	0	0	8
Savannah	0	......	0	......	......	......	2	......	......	......	......
Florida:											
Miami	0	0	0	0	0	2	......	2	1	5	27
St. Petersburg	0	......	0	......	0	0	0	......	0	......	12
Tampa	1	1	0	0	0	2	1	1	0	0	24
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0	3	0	0	0	2	0	0	0	0	20
Louisville	2	1	0	4	0	2	4	1	1	1	77
Tennessee:											
Memphis	1	3	0	1	0	2	5	4	1	3	75
Nashville	1	1	0	0	0	2	5	20	0	2	44
Alabama:											
Birmingham	1	1	1	5	0	7	4	4	0	5	72
Mobile	0	0	0	0	0	0	0	0	0	1	12
Montgomery	0	0	0	0	0	0	1	3	0	0	......

City reports for week ended July 9, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1		0				0				
Little Rock	0	0	0	0	0	2	2	0	0	5	
Louisiana:											
New Orleans	1	1	1	0	0	18	4	4	0	0	140
Shreveport	0	0	1	0	0	1	1	0	0	2	31
Oklahoma:											
Oklahoma City	0	2	0	6	0	0	2	2	1	1	32
Texas:											
Dallas	1	2	0	0			3	0		0	
Galveston	0	0	0	0	0	1	0	0	0	0	9
Houston	0	7	0	0	0	2	2	0	0	0	44
San Antonio	0	0	0	0			1	0		0	
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	0	0	0	0	9	9
Great Falls	0	3	1	0	0	1	0	0	0	0	6
Helena	0	3	0	0	0	0	0	0	0	0	4
Missoula	0	1	0	0	0	0	0	0	0	0	6
Idaho.											
Boise	0	0	1	0	0	0	0	0	0	0	4
Colorado											
Denver	6	3	2	0	0	5	1	0	0	8	83
Pueblo	0	0	0	0	0	0	1	0	0	0	6
New Mexico:											
Albuquerque	0	0	0	0	0	4	0	0	0	0	6
Utah:											
Salt Lake City	1	3	0	5	0	0	0	2	0	23	32
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	1
PACIFIC											
Washington:											
Seattle	6	4	3	0			0	0		10	
Spokane	2	4	3	15			0	0		5	
Tacoma	1	1	2	7	0	0	0	0	0	3	24
Oregon:											
Portland	3	0	6	4	0	3	0	1	0	6	58
California:											
Los Angeles	11	7	3	0	0	27	4	2	0	13	199
Sacramento	1	0	0	2	0	2	1	2	0	0	15
San Francisco	6	7	1	4	0	7	1	0	0	17	146

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Boston	0	1	0	0	2	0	0	2	1
Rhode Island:									
Providence	1	0	0	0	0	0	0	0	0
MIDDLE ATLANTIC									
New York:									
New York	1	2	2	3	0	0	2	2	2
Pennsylvania:									
Philadelphia	0	0	0	3	0	0	0	0	0
Pittsburgh	0	0	0	1	0	0	0	0	1

City reports for week ended July 9, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Csaes	Deaths	Cases, estimated expectancy	Cases	Deaths
EAST NORTH CENTRAL									
Ohio:									
Cleveland	1	0	0	0	0	0	0	0	0
Columbus	0	0	0	1	0	0	0	0	0
Illinois:									
Chicago	2	1	0	0	1	1	1	0	0
Wisconsin:									
Milwaukee	7	4	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	2	1	0	0	0	0	0	0	0
Minneapolis	0	0	1	0	0	0	0	0	0
Missouri:									
Kansas City	0	0	0	1	0	0	0	0	0
SOUTH ATLANTIC									
North Carolina:									
Raleigh	0	0	0	0	0	1	0	0	0
South Carolina:									
Charleston	0	0	0	0	1	2	0	1	0
Georgia:									
Atlanta	0	0	0	0	2	0	0	1	0
Florida: [1]									
Miami	1	0	0	0	2	0	0	0	0
EAST SOUTH CENTRAL									
Tennessee:									
Memphis	0	0	0	0	1	0	0	0	0
Nashville	0	0	0	0	0	1	0	2	0
Alabama:									
Birmingham	0	0	0	0	2	0	0	1	0
Mobile	0	0	0	0	1	0	0	0	0
WEST SOUTH CENTRAL									
Louisiana:									
New Orleans	0	0	0	0	0	0	0	5	1
Shreveport	0	0	0	0	0	5	0	0	0
Texas:									
Dallas	0	-------	0	-------	0	-------	0	1	-------
Houston	0	1	0	0	0	1	0	0	0
MOUNTAIN									
Montana:									
Billings	1	0	0	0	0	0	0	0	0
Utah:									
Salt Lake City	0	0	0	0	0	0	0	1	0
PACIFIC									
Washington:									
Spokane	1	-------	0	-------	0	-------	0	0	-------
Tacoma	1	1	0	0	0	0	0	0	0
Oregon:									
Portland	0	1	0	1	0	0	0	0	0
California:									
Los Angeles	2	0	0	0	0	0	0	6	0
Sacramento	1	0	0	0	0	0	0	0	0
San Francisco	2	0	1	0	0	1	0	2	0

[1] Typhus fever: 1 case at Tampa, Fla.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended July 9, 1927, compared with those for a like period ended July 10, 1926. The population figures used in computing the rates are approximate estimates as of July 1,

1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, June 5 to July 9, 1927—annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927
101 cities	136	[2] 162	113	151	130	162	[3] 122	[4] 142	102	[5] 123
New England	68	132	78	118	59	116	64	88	57	[6] 92
Middle Atlantic	156	248	125	217	152	270	164	212	120	197
East North Central	146	126	131	142	162	132	117	[7] 125	106	102
West North Central	234	81	169	79	192	46	125	60	93	[8] 39
South Atlantic	60	[2] 124	67	118	45	107	82	143	65	[9] 86
East South Central	26	20	16	41	10	36	[3] 22	[10] 21	5	41
West South Central	47	46	43	55	43	67	47	[11] 125	43	[11] 52
Mountain	128	369	146	207	118	153	155	[12] 129	118	108
Pacific	158	126	102	115	131	113	129	76	179	86

MEASLES CASE RATES

	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927
101 cities	930	[2] 426	749	361	619	302	[3] 461	[4] 276	311	[5] 196
New England	658	457	493	406	425	327	318	341	245	[6] 322
Middle Atlantic	708	299	586	281	477	247	314	201	211	154
East North Central	1,026	296	1,003	261	838	214	739	[7] 215	481	182
West North Central	2,051	373	1,264	248	942	216	605	204	417	[8] 88
South Atlantic	1,093	[2] 851	818	694	695	531	432	447	291	[9] 249
East South Central	1,391	158	693	132	610	132	[3] 428	[10] 85	284	76
West South Central	125	424	77	268	95	130	52	[11] 151	47	[11] 116
Mountain	921	566	702	342	793	450	437	[12] 505	264	135
Pacific	589	1,139	597	971	482	843	458	775	335	539

SCARLET FEVER CASE RATES

	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927
101 cities	260	[2] 241	233	198	212	190	[3] 170	[4] 130	127	[5] 100
New England	255	323	203	265	236	237	186	221	158	[6] 182
Middle Atlantic	195	287	222	224	210	223	188	149	129	123
East North Central	333	247	273	216	251	209	187	[7] 135	145	91
West North Central	627	195	484	163	357	159	270	89	206	[8] 94
South Atlantic	158	[2] 110	130	82	151	96	65	82	63	[9] 56
East South Central	78	66	47	71	47	82	[3] 66	[10] 59	52	46
West South Central	86	34	69	8	30	38	60	[11] 17	34	[11] 43
Mountain	118	719	128	665	118	441	91	[12] 294	55	117
Pacific	236	204	214	181	158	139	150	86	121	60

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.
[2] Greenville, S. C., not included.
[3] Covington, Ky., not included.
[4] Indianapolis, Ind., Montgomery, Ala., Fort Smith, Ark., and Helena, Mont., not included.
[5] Bridgeport, Conn., Sioux City, Iowa, Savannah, Ga., and Fort Smith, Ark., not included.
[6] Bridgeport, Conn., not included.
[7] Indianapolis, Ind., not included.
[8] Sioux City, Iowa, not included.
[9] Savannah, Ga., not included.
[10] Montgomery, Ala., not included.
[11] Fort Smith, Ark., not included.
[12] Helena, Mont., not included.

Summary of weekly reports from cities, June 5 to July 9, 1927—annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

SMALLPOX CASE RATES

	Week ended—									
	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927
101 cities	16	[2] 20	11	19	16	16	[3] 11	[4] 13	7	[5] 16
New England	0	0	0	0	0	0	0	0	0	[6] 0
Middle Atlantic	0	0	0	0	0	0	2	0	0	0
East North Central	12	21	10	21	14	12	10	[7] 4	7	15
West North Central	28	32	32	30	44	58	26	38	28	[8] 33
South Atlantic	37	[2] 20	30	36	26	29	11	18	9	[9] 24
East South Central	52	107	10	56	88	56	[3] 38	[10] 21	0	51
West South Central	34	8	26	13	17	13	21	[11] 13	4	[11] 0
Mountain	40	27	27	54	18	50	55	[12] 64	9	15
Pacific	51	92	24	65	32	21	19	73	24	73

TYPHOID FEVER CASE RATES

101 cities	12	[2] 11	11	13	12	11	[3] 16	[4] 15	13	[5] 17
New England	17	5	19	12	9	2	12	7	9	[6] 15
Middle Atlantic	6	6	9	6	10	4	11	6	7	8
East North Central	4	7	3	8	4	6	5	[7] 5	5	5
West North Central	6	14	10	6	4	6	10	8	16	[8] 10
South Atlantic	26	[2] 18	28	27	30	40	35	22	43	[9] 36
East South Central	57	41	21	82	36	61	[3] 126	[10] 134	52	163
West South Central	52	31	20	38	30	21	13	[11] 78	20	[11] 17
Mountain	9	0	0	18	0	18	27	[12] 9	0	18
Pacific	13	21	8	8	16	8	21	16	13	10

INFLUENZA DEATH RATES

95 cities	10	[2] 6	7	6	5	7	[3] 6	[13] 3	4	[11] 3
New England	12	0	9	2	0	5	5	5	7	[6] 2
Middle Atlantic	9	5	9	5	6	6	7	2	1	4
East North Central	10	4	3	5	3	5	5	[7] 3	7	3
West North Central	4	4	4	2	6	10	8	2	0	0
South Atlantic	6	[2] 9	4	9	6	2	8	6	0	[9] 4
East South Central	36	10	16	5	5	25	[3] 0	[10] 0	16	15
West South Central	18	26	22	17	22	4	13	4	4	[11] 0
Mountain	9	9	0	9	0	27	9	[12] 9	0	0
Pacific	0	7	4	0	0	10	4	3	4	3

PNEUMONIA DEATH RATES

95 cities	95	[2] 94	87	87	73	74	[3] 75	[13] 73	67	[11] 60
New England	101	88	87	107	68	86	92	60	54	[6] 60
Middle Atlantic	110	112	95	95	83	85	90	71	73	64
East North Central	87	93	74	86	60	71	61	[7] 79	65	49
West North Central	59	50	74	48	44	52	38	77	53	54
South Atlantic	96	[2] 65	112	61	95	46	89	57	72	[9] 59
East South Central	124	112	98	71	124	56	[3] 121	[10] 102	119	82
West South Central	88	103	66	95	71	43	53	73	53	[11] 99
Mountain	82	90	100	153	109	54	46	[12] 92	36	99
Pacific	67	83	74	100	42	131	42	69	53	65

[2] Greenville, S. C., not included.
[3] Covington, Ky., not included.
[4] Indianapolis, Ind., Montgomery, Ala., Fort Smith, Ark., and Helena, Mont., not included.
[5] Bridgeport, Conn., Sioux City, Iowa, Savannah, Ga., and Fort Smith, Ark., not included.
[6] Bridgeport, Conn., not included.
[7] Indianapolis, Ind., not included.
[8] Sioux City, Iowa, not included.
[9] Savannah, Ga., not included.
[10] Montgomery, Ala., not included.
[11] Fort Smith, Ark., not included.
[12] Helena, Mont., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

THE FAR EAST

Reports for weeks ended June 25 and July 2, 1927.—The following reports for the weeks ended June 25 and July 2, 1927, were transmitted by the Eastern Bureau of the Health Section of the Secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Week ended June 25, 1927

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Ceylon. Colombo[1]	2	2	0	0	0	0
British India.						
Karachi	----	0	----	0	1	0
Bombay	----	5	----	0	37	24
Negapatam	----	0	----	0	0	1
Madras	----	0	----	3	1	1
Calcutta	----	0	----	31	27	21
Bassein	----	7	----	1	0	0
Rangoon	----	3	----	1	7	3
Siam. Bangkok	0	0	4	1	2	0
French Indo-China.						
Saigon and Cholon	0	0	3	0	0	0
French Indo-China—Continued.						
Tourane	0	0	2	2	0	0
Haiphong	0	0	8	8	0	0
China.						
Canton	0	0	3	0	0	0
Hong Kong	0	0	0	0	1	1
Manchuria:						
Mukden	0	0	0	0	1	0
Changchun	0	0	0	0	1	0
Japan. Nagasaki	0	0	0	0	1	0
Egypt. Port Said	2	0	0	0	0	0

[1] One plague-infected rat was found during the week.

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Arabia.—Jeddah.

Iraq.—Basra.

Persia.—Mohammerah, Bender-Abbas, Bushire, Lingah.

British India.—Vizagapatam, Chittagong, Cochin, Tuticorin, Moulmein.

Portuguese India.—Nova Goa.

Federated Malay States.—Port Swettenham.

Straits Settlements.—Singapore, Penang.

Dutch East Indies.—Batavia, Banjermasin, Sabang, Pontianak, Semarang, Menado, Cheribon, Makassar, Balikpapan, Padang, Palembang, Surabaya, Belewan-Deli.

Sarawak.—Kuching.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

Portuguese Timor.—Dilly.

Philippine Islands.—Manila, Iloilo, Jolo, Cebu, Zamboanga

China.—Amoy, Shanghai, Tientsin, Tsingtao.

Macao.

Formosa.—Keelung, Takao.

Chosen.—Chemulpo, Fusan.

Manchuria.—Yingkow, Antung, Harbin.

Kwantung.—Port Arthur, Dairen.

Japan.—Yokohama, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns.

New Guinea.—Port Moresby.

New Britain Mandated Territory.—Rabaul and Kokopo.

New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.

Samoa.—Apia

New Caledonia.—Noumea

Fiji.—Suva

Hawaii.—Honolulu

Society Islands.—Papeete

AFRICA

Egypt.—Suez, Alexandria.

Anglo-Egyptian Sudan.—Port Sudan, Suakin.

Eritrea.—Massaua

French Somaliland.—Djibouti.

British Somaliland.—Berbera

Italian Somaliland.—Mogadiscio.

Zanzibar.—Zanzibar.

Kenya.—Mombasa.

Tanganyika.—Dar-es-Salaam.

Seychelles.—Victoria.

AFRICA—continued

Portuguese East Africa.—Mozambique, Beira, Lourenco-Marques.

Union of South Africa—East London, Port Elizabeth, Cape Town, Durban.

Reunion.—Saint Denis.

AFRICA—continued

Mauritius.—Port Louis.

Madagascar.—Majunga, Tamatave, Diego-Suarez.

AMERICA

Panama—Colon, Panama.

Reports had not been received in time for publication from:

Arabia—Kamaran, Aden, Perim.

Dutch East Indies—Samarinda, Tarakan.

Union of Socialist Soviet Republics.—Vladivostok.

Belated information:

Week ended June 18: *Canton, Pondicherry* and *Karikal*, nil.

Movement of infected ships:

Singapore.—S. S. *Rohna* has arrived from *Negapatam* with smallpox cases among coolies.

Week ended July 2, 1927

Maritime towns	Plague		Cholera		Small-pox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Ceylon: Colombo [1]	2	2	0	0	3	0
British India.						
Bombay	----	7	----	2	28	18
Negapatam	----	0	----	2	1	0
Madras	----	0	----	0	6	2
Vizagapatam	----	0	----	0	4	1
Calcutta	----	0	----	21	16	11
Bassein	----	2	----	2	0	0
Rangoon	----	4	----	0	7	3
Siam: Bangkok	0	0	1	0	1	1

Maritime towns	Plague		Cholera		Small-pox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
French Indo-China:						
Saigon and Cholon	0	0	2	0	0	0
Tourane	0	0	2	1	0	0
China: Hong Kong	0	0	0	0	2	2
Manchuria. Mukden	0	0	0	0	1	0
Japan: Nagasaki	0	0	0	0	18	0
Egypt:						
Alexandria	1	0	0	0	0	0
Suez	0	0	0	0	1	0

[1] One plague-infected rat has been found during the week.

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Arabia—Jeddah, Aden, Perim.

Iraq.—Basra.

Persia—Mohammerah, Bender-Abbas, Bushire, Lingah.

British India.—Karachi, Chittagong, Cochin, Tuticorin, Moulmein.

Portuguese India—Nova Goa.

Federated Malay States.—Port Swettenham.

Straits Settlements.—Singapore, Penang.

Dutch East Indies.—Batavia, Banjermasin, Pontianak, Semarang, Menado, Cheribon, Makassar, Balikpapan, Padang, Palembang, Surabaya, Belawan-Deli, Samarinda, Tarakan.

Sarawak.—Kuching.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

French Indo-China.—Haiphong.

Portuguese Timor.—Dilly.

Philippine Islands.—Manila, Iloilo, Jolo, Cebu, Zamboanga.

China.—Canton, Amoy, Shanghai, Tientsin, Tsingtao.

Macao.

Formosa.—Keelung, Takao.

Chosen.—Chemulpo, Fusan.

Manchuria.—Yingkow, Antung, Changchun, Harbin.

ASIA—continued

Kwantung.—Port-Arthur, Dairen.

Japan—Yokohama, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns.

New Guinea.—Port Moresby.

New Britain Mandated Territory.—Rabaul and Kokopo.

New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.

Samoa.—Apia.

New Caledonia.—Nouméa.

Fiji.—Suva.

Hawaii.—Honolulu.

Society Islands.—Papeete.

AFRICA

Egypt.—Port Said.

Anglo-Egyptian Sudan.—Port Sudan, Suakin.

Eritrea.—Massaua.

French Somaliland.—Djibouti.

AFRICA—continued

British Somaliland.—Berbera.
Italian Somaliland.—Mogadiscio.
Zanzibar.—Zanzibar.
Kenya.—Mombasa.
Tanganyika.—Dar-es-Salaam.
Seychelles.—Victoria.
Portuguese East Africa.—Mozambique, Beira, Lourenço-Marques.
Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.
Reunion.—Saint Denis.
Mauritius.—Port Louis.
Madagascar.—Majunga, Tamatave, Diégo-Suarez.

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from:

Arabia: Kamaran.
Dutch East Indies: Sabang.
Union of Socialist Soviet Republics: Vladivostok.

CANADA

Communicable diseases—Two weeks ended July 9, 1927.—The Canadian ministry of health reports cases of certain communicable diseases from seven Provinces of Canada for the two weeks ended July 9, 1927, as follows:

WEEK ENDED JULY 2, 1927

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever				1				1
Influenza	6							6
Lethargic encephalitis				1				1
Poliomyelitis				1				1
Smallpox				34	3	1	10	48
Typhoid fever	4	8	75	25	1	1	1	115

WEEK ENDED JULY 9, 1927

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever			1			1		2
Influenza	3				3			6
Lethargic encephalitis						1		1
Smallpox				11			14	25
Typhoid fever		4	66	4	1		4	79

Communicable diseases—Quebec—Week ended July 9, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended July 9, 1927, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	1	Scarlet fever	50
Chicken pox	12	Smallpox	6
Diphtheria	43	Tuberculosis	11
German measles	6	Typhoid fever	66
Influenza	2	Whooping cough	13
Measles	37		

Typhoid fever—Montreal—January 2–July 16, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	Apr. 16, 1927	175	38
Jan. 15, 1927	4	3	Apr. 23, 1927	125	43
Jan. 22, 1927	1	2	Apr. 30, 1927	105	23
Jan. 29, 1927	3	1	May 7, 1927	106	19
Feb. 5, 1927	1	0	May 14, 1927	367	16
Feb. 12, 1927	0	0	May 21, 1927	770	26
Feb. 19, 1927	1	2	May 28, 1927	353	38
Feb. 26, 1927	1	1	June 4, 1927	239	37
Mar. 5, 1927	9	1	June 11, 1927	128	36
Mar. 12, 1927	203	4	June 18, 1927	86	
Mar. 19, 1927	383	14	June 25, 1927	75	23
Mar. 26, 1927	568	22	July 2, 1927	66	21
Apr. 2, 1927	649	48	July 9, 1927	52	10
Apr. 9, 1927	386	40	July 16, 1927	39	4

EGYPT

Plague—June 4–22, 1927.—Plague has been reported in Egypt as follows: Week ended June 10, 1927—two cases, of which one occurred at Alexandria; June 22, 1927—one fatal case, septicemic, at Port Said.

Summary—January 1–June 10, 1927.—During the period January 1 to June 10, 1927, 42 cases of plague were reported in Egypt, as compared with 66 cases reported for the corresponding period of the year 1926.

GREAT BRITAIN (SCOTLAND)

Chicken pox—Glasgow—May 1–28, 1927.—During the four weeks ended May 28, 1927, chicken pox was reported still prevalent, with 796 registered cases at Glasgow, Scotland.

ITALY

Undulant (Mediterranean) fever—Florence.—The occurrence of undulant, or Mediterranean, fever has been reported at Florence, Italy, as follows: Week ended May 28, 1927, cases, 4; week ended June 18, 1927, cases, 2.

LIBERIA

Yellow fever—Monrovia—June 5–18, 1927.—During the weeks ended June 11 and 18, 1927, three cases of yellow fever were reported at Monrovia, Liberia.

SENEGAL

Yellow fever—M'Bour—June 15–16, 1927.—Two fatal cases of yellow fever were reported at M'Bour, Senegal, occurring June 15 and 16, respectively. The cases occurred in Syrians.

VIRGIN ISLANDS

Communicable diseases—June, 1927.—During the month of June, 1927, communicable diseases were reported in the Virgin Islands of the United States as follows:

Island and disease	Cases	Remarks
St. Thomas and St. John:		
Gonococcus infection	1	
Syphilis	4	Secondary, 2.
Tuberculosis	3	Chronic, pulmonary. One imported
Uncinariasis	1	Necator americanus.
St. Croix.		
Dysentery	1	Entamebic
Filariasis	5	Bancrofti
Leprosy	1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended July 29, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Swatow	June 5-11			Prevalent.
India				May 15-28, 1927. Cases, 15,529; deaths, 9,080.
Bombay	May 29-June 4	1	1	
Calcutta	June 5-11	42	22	
Rangoon	do	1	1	
Indo-China (French).				
Saigon	May 28-June 3	3	2	
Philippine Islands.				
Bulacan Province	June 7	1		At Mambog, Malalos.
Leyte Province—				
Palo	May 18	1		Two suspect cases, Leyte Province, May 20; one suspect case, Masbate Province, May 23, 1927. Awaiting confirmation.
Siam				May 29-June 4, 1927 Cases, 6; deaths, 5
Bangkok	May 29-June 4	3	1	Apr. 1 June 4, 1927. Cases, 481; deaths, 328.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Egypt				June 4-22, 1927. Cases, 3; deaths, 1
City—				
Alexandria	June 4-10	1		
Port Said	June 22	1	1	Septicemic.
District—				
Biba	June 4-10	1		At Nana.
Greece	May 1-31	1	1	
India				May 15-28, 1927: Cases, 15,073; deaths, 3,458.
Bombay	May 29-June 11	8	5	
Rangoon	June 5-11	5	5	
Java:				
Batavia	May 29-June 11	27	27	Province.
East Java and Madura	May 22-28	6	6	
Senegal				June 20-26, 1927. In three interior districts, cases, 17; deaths, 5.
Dakar	June 20-26	5	3	
Rufisque	do	16	15	In the suburbs of Guindel and Tivaouane.
Thies	do	8	4	Including Pout.

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended July 29, 1927—Continued

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria:				
Oran	June 21-30	3		
British South Africa:				
Northern Rhodesia	May 28-June 3	31		Native.
Canada				June 26-July 9, 1927: Cases, 73.
Alberta	June 26-July 9	24		
Manitoba	do	3		
Winnipeg	July 9-15	3		
Ontario	June 26-July 9	45		
Ottawa	July 10-16	6		
Toronto	June 26-July 16	4		
Quebec	July 3-9	6		
Saskatchewan	June 26-July 2	1		
China:				
Hong Kong	June 5-11	1	2	
Manchuria—				
Changchun	May 30-June 5	1		
Fushun	do	1		
Egypt:				
Alexandria	June 11-17	1		
Cairo	Jan. 22-28	3		
France:				
Paris	May 21-June 20	8	2	
Great Britain:				
England and Wales—				
Cardiff	June 26-July 2	2		
Newcastle-on-Tyne	do	1		
Scotland—				
Dundee	do	1		
Greece	May 1-31	3	1	
India				May 15-28, 1927: Cases, 1,038; deaths, 704.
Bombay	May 28-June 11	75	49	
Calcutta	June 5-11	44	35	
Madras	June 12-18	1		
Rangoon	June 5-11	8	4	
Poland	May 1-14	3		
Portugal:				
Lisbon	June 12-July 2	1	1	
Siam	May 29-June 4	2		Apr. 1-June 4, 1927: Cases, 68; deaths, 21.

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria:				
Oran	June 21-30	8		
Egypt:				
Cairo	Jan. 15-21	1		
Greece	May 1-31	11		
Palestine:				
Safad	June 14-20	2		
Poland	May 1-14	244	19	

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Liberia:				
Monrovia	June 5-18	3		
Senegal:				
M'Bour	June 15-16	2	2	In Syrians.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to July 22, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-28	1	1	
Swatow	May 15-28	7	8	
India	Apr. 17-May 14			Cases, 14,805; deaths, 7,207.
Bombay	May 8-14	1		
Calcutta	May 8-June 4	319	204	
Karachi	May 29-June 4	1	1	
Rangoon	May 8-June 4	8	5	
India, French Settlements in	Mar. 30-Apr. 30	4	2	
Indo-China (French).				
Saigon	Apr. 30-May 27	124	90	Including Cholon.
Siam	May 1-28			Cases 101; deaths, 43.
Bangkok	do	23	6	

PLAGUE

Place	Date	Cases	Deaths	Remarks
Argentina:				
Formosa	Reported July 6	3		
Azores				
St Michaels Island	May 15-June 3	2		
British East Africa.				
Kenya	Apr. 24-May 7	7	14	
Tanganyika	Mar 29-May 7		36	
Uganda	Jan. 1-Feb. 28	138	121	
Do	Mar. 27-May 14	72	57	
Canary Islands:				
Laguna District—Tejina	June 17	1		
Ceylon.				
Colombo	May 1-June 4	11	7	Plague rats, 4.
Egypt	May 21-27			Cases, 1. Total from Jan. 1-May 27, 1927: Cases, 40; corresponding period, 1926. Cases, 43
Alexandria	June 4-10	1		
Beni-Souef	do	1		
Tanta District	do	1		
Greece				
Patras	May 30-June 11	4		
India.	Apr. 17-May 14			Cases, 5,584; deaths, 4,121.
Bombay	May 8-28	54	51	
Madras	May 1 21	21	9	
Rangoon	May 8-June 4	13	11	
Indo-China (French)	Apr. 1-May 10	7		
Iraq.				
Baghdad	Apr 8-16	3	1	
Java:				
Batavia	May 1-28	60	61	Province.
East Java and Madura—				
Pasoeroean Residency	May 9			Outbreak reported at Ngadiwono
Surabaya	Apr. 17-May 7	24	24	
Madagascar				Mar. 16-Apr 15, 1927: Cases, 184; deaths, 168.
Province—				
Ambositra	Mar. 16-Apr. 15	32	27	
Antisirabe	do	6	6	
Miarinarivo (Itasy)	do	32	32	
Moramanga	do	8	8	
Tananarive	do	102	91	
Tananarive Town	do	6	6	
Peru	Apr. 1-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	do	13	4	
Lima City	Apr. 1-30	5	1	
Senegal	May 23-June 19			Cases, 60; deaths, 30.
Baol	June 2-19	4	1	
Guindel	do	11	2	
Medina	June 13-19	2	2	
Rufisque	May 23-June 19	28	12	
Thies District	do	12	2	
Tivaouane	June 2-19	7	3	

[1] From medical officers of the Public Health Service, American consuls, and other sources. For reports received from January 2 to June 24, 1927, see Public Health Reports for June 24, 1927. The tables of epidemic diseases are terminated semiannually and new tables begun.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to July 22, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Siam	Apr. 1-May 21			Cases, 8; deaths, 7.
Bangkok	May 8-14	1	1	
Tunisia	Reported May 20	15		In districts of Sfax and Susa.
Turkey:				
Constantinople	May 13-19	1		
Union of South Africa:				
Cape Province—				
Maraisburg district	May 1-14	2	2	Native.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-May 10	168		
Algiers	May 11-20	4		
Oran	May 21-June 20	31		
Brazil:				
Rio de Janeiro	May 22-June 11	3	3	
British East Africa:				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 29-May 7		22	
British South Africa				
Northern Rhodesia	Apr. 30-May 6	1		Native.
Canada	June 5-25			Cases, 100.
Alberta	June 12-25	24		
Calgary	June 12-25	5		
British Columbia—				
Vancouver	May 23-29	2		
Manitoba	June 5-25			Cases, 7.
Winnipeg	June 12-July 7	9		
Ontario	June 5-25			Cases, 54.
Ottawa	June 12-July 9	28		
Toronto	June 19-25	4		
Quebec	June 19-25	1		
Saskatchewan	June 12-25	15		
Ceylon	May 1-7			Cases, 3; deaths, 1.
China:				
Amoy	May 8-28	1		
Chefoo	May 8-14			Present
Foochow	do			Do.
Hong Kong	May 8-June 4	12	11	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-28	2		
Dairen	May 2-8	3	3	
Fushun	May 15-June 4	8		
Mukden	May 22-28	2		
Ssupingkai	May 8-14	1		
Tientsin	May 8-28	11		
Chosen	Feb. 1-Apr. 30	354	84	
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr. 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr. 1-30	1		
Curaçao	May 29-June 4	1		Alastrim.
Egypt	May 7-27			Cases, 12; deaths, 2.
Alexandria	May 21-27	3	1	
France	Apr. 1-30			Cases, 66.
Paris	June 1-10	4		
Gold Coast	Mar. 1-30	18	4	
Great Britain:				
England and Wales	May 22-June 18			Cases, 982.
Bradford	May 29-June 11	2		
Cardiff	June 19-25	2		
Liverpool	do	1		
London	May 15-June 18	2		
Newcastle on Tyne	June 12-18	1		
Sheffield	June 12-25	12		
Scotland—				
Dundee	May 29-June 25	4		
India				Apr. 17-May 14, 1927: Cases, 32,626; deaths, 7,741.
Bombay	May 8-28	156	97	
Calcutta	May 8-June 4	194	147	
Karachi	May 15-June 4	7	5	
Madras	May 22-June 11	6	2	
Rangoon	May 8-June 4	80	22	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to July 22, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
India, French Settlements in	Mar. 20-Apr. 30	96	59	
Indo-China (French)	Mar. 21-Apr. 10	190		
Saigon	May 14-20	1	1	
Iraq				
Baghdad	Apr. 10-16	2		
Basra	do	1		
Italy	Apr. 10-May 7	5		
Jamaica	May 29-June 25	9		Reported as alastrim.
Japan	Apr 3-May 7	19		
Nagasaki City	Reported July 9	20		
Java:				
Batavia	May 22-28	1		
East Java and Madura	Apr. 24-30	1		
Latvia	Apr. 1-30	1		
Mexico:				
Durango	June 1-30		1	
San Luis Potosi	May 29-July 2		6	
Tampico	June 1-10	1	1	
Morocco	Apr. 1-30	55		
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in two localities.
Persia:				
Teheran	Feb. 21-Apr. 20		5	
Poland	Apr. 10-23	3		
Portugal				
Lisbon	May 29-June 25	10		
Siam	May 1-28			Cases, 10; deaths, 7
Bangkok	May 15-28	4	2	
Spain:				
Valencia	May 29-June 4	2		
Straits Settlements:				
Singapore	Apr 1-May 21	3	1	
Tunisia	Apr. 1-May 14	5		
Tunis	June 1-10	1		
Union of South Africa				
Transvaal -				
Barberton District	May 1-7			Outbreaks.

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-May 10	109	16	
Algiers	May 11-June 10	21		
Oran	May 21-June 20	14		
Bulgaria	Mar. 1-31	58	6	
Sofia	June 4-10	1		
Chile:				
Concepcion	May 29-June 4		1	
Ligua	Mar. 16-31	2		
China:				
Manchuria—				
Mukden	May 29-June 4	1		
Chosen	Feb. 1-Apr. 30			Cases, 330; deaths, 30.
Chemulpo	May 1-31	4		
Gensan	do	1		
Seoul	Apr. 1-May 31	9		
Czechoslovakia				Apr. 1-30, 1927. Cases, 21.
Egypt:				
Alexandria	May 21-June 3	3	1	
Estonia	Apr. 1-30			Case, 1.
Iraq:				
Baghdad	Apr. 24-30	1		
Latvia	Apr. 1-30	12		
Mexico	Feb. 1-28			Deaths, 20.
Mexico City	May 29-June 11	7		Including municipalities in Federal District.
Morocco	Apr. 1-May 7	249		
Palestine	May 24-June 6			Cases, 3.
Haifa	do	2		
Mahnaim	May 17-23	1		In Safad District.
Safad	May 17-June 13	1		
Peru:				
Arequipa	Apr. 1-30		1	
Poland	Apr. 10-30	398	33	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to July 22, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Portugal:				
Lisbon	May 29-June 4	1		
Rumania	Apr. 3-May 7	583	41	
Tunisia	Apr. 21-May 10	78		
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa	Apr. 1-30			Cases, 55; deaths, 8, native. In Europeans, cases, 2.
Cape Province	Apr. 1-May 18	42	5	
East London	May 22-28	1		
Glen Grey District	May 1-7			Outbreaks
Qumbu District	do			Do.
Natal	Apr. 1-May 21	7	3	
Orange Free State	Apr. 1-May 28	5		
Transvaal	Apr. 1-30	1		
Yugoslavia	May 1-31			Cases, 4.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Liberia:				
Monrovia	May 29-July 8	1	5	
Senegal	May 27			Cases, 3.
M'Bour	May 27-June 19	3	3	
Ouakam	June 2-8	1	1	
Tivaouane	May 27-June 8	5	5	

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UNITED STATES PUBLIC HEALTH SERVICE

HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

Asst. Surg. Gen. C. C. PIERCE, *Chief of Division*

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PUBLIC HEALTH REPORTS

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SOME TESTS OF THE LARVICIDE "STOXAL"

By M. A. BARBER, *Special Expert*, and W. H. W. KOMP, *Associate Sanitary Engineer, United States Public Health Service*

In 1920 Roubaud (1) (2) recommended the use of trioxymethylene (paraformaldehyde) as a larvicide for anopheline larvæ. The dry material, used alone or mixed with some inert substance, as flour or powdered chalk, is spread in the form of a dust cloud on the surface of the water, where it is ingested by the larvæ. More recently Roubaud (3) has described a larvicide bearing the trade name of "stoxal," the active principle of which is trioxymethylene, to which is added a special medium in the form of a fine dry powder. This medium is designed to increase the efficiency of trioxymethylene by preventing too rapid wetting, by increasing its flotability by holding it in suspension, and by otherwise rendering it more likely to be ingested by the larvæ.

The stoxal which we used in our tests was kindly furnished by the American manufacturers (Powers-Weightman-Rosengarten Co., Philadelphia). It is described on the label as containing an active ingredient, paraformaldehyde 32.5 per cent, and inert ingredients 67.5 per cent.

We used this larvicide undiluted, and soon after its arrival from the manufacturers. We were careful to use no material which had been long exposed to the air; many tests were made with samples from the freshly opened tin containers, and a tin once opened was carefully closed. In almost all of the experiments on *Anopheles* we used a hand duster to spread the dust. All experiments were done in May and June, months during which the water in southern United States is warm and the larvæ are in full activity.

In many experiments we used Paris green, aceto-arsenite of copper, for comparison. Our Paris green has been kept in the laboratory for four years or longer, without apparent loss of activity. We used it diluted 1 part to 100 of fine road dust, and a mixture once made was kept for weeks with no precautions against deterioration except that of keeping the mixture dry.

LABORATORY TESTS OF STOXAL—ANOPHELES

We performed two types of laboratory experiments with stoxal—one in which the water surface was kept free, another in which the water surface was partially covered by water plants, driftwood, or other débris in such a way as to imitate the natural water surfaces on which *Anopheles* ordinarily breed. In most of the laboratory experiments, larvæ were placed in shallow water contained in photographic developing trays, 6 inches by 8 inches, or 9 inches by 11 inches in area. The dust was usually applied by means of a hand duster, sometimes in the open and sometimes in a closed or partially closed room.

The number of experiments with free water surface was large, since we used these as controls on other experiments. We found a wide variation in the results of such experiments, even where stoxal was used in large amounts. It was obviously impossible to estimate exactly the amount used per unit of water surface when the dust was spread by a mechanical duster over a very small area, but we always took pains to have a distinct film of stoxal, the thickness of which was made to vary in different experiments. Where Paris green was used as a control, we always used a lighter film of the 1 to 100 dilution than we did of stoxal.

We found a wide variation in the results obtained with stoxal on water with free surface, a variation which a few protocols will illustrate:

Experiment No. 1.—Ten anopheline larvæ were placed in tap water contained in a 6 by 8 inch white enameled developing tray. Two centigrams of stoxal were applied evenly on the surface. At the end of 20 hours only three-tenths of the larvæ were dead; after 44 hours, four-tenths were dead; at the end of 90 hours, one-half were still surviving. In the Paris green control, about a centigram of a 1 to 100 dilution had killed all larvæ at the end of 44 hours.

Experiment No. 2.—Ten anopheline larvæ in a 9 by 11 inch developing tray were treated in the open by a wind-borne cloud of stoxal. A very distinct film was deposited. The next day, seven-tenths were dead; two days after application, eight-tenths were dead. In the Paris green control a lighter film of a one-one hundredths dilution applied in the same way destroyed all larvæ by the following day.

Experiment No. 3.—Fifteen anopheline larvæ contained in a 6 by 8 inch developing tray were placed in a partially inclosed building in which stoxal dust was blown and allowed to settle on the larvæ. On the next day all were dead.

In the second type of laboratory experiments, in which water plants or other means of protection were placed on the water, the efficiency of stoxal was much less than where the water surface was free. In these experiments the water plants or débris were never placed so thickly as to prevent the larvicide from reaching the water, and the dosage used was always high enough to leave a distinct and

often thick film on the surface of the water. A few protocols of experiments will illustrate the method and results.

Experiment No. 1.—Nine by eleven inch developing trays were provided with water containing *Spirogyra* and *Jussiaea*, the latter growing on small islands of mud, one island to each tray. Each tray was supplied with 10 anopheline larvæ. One tray was treated with a heavy film of stoxal, another with a lighter film of one one-hundredths Paris green, and the third left as a control. The trays were left in the open during the day and night. After one day nine-tenths of the larvæ treated with stoxal and all of those treated with Paris green were dead. All controls were surviving.

Experiment No. 2.—A 9 by 11 inch developing tray was provided with a mat of green grass so arranged that the grass blades projected above the water. A second tray (6 by 8 inches) was partly covered by the floating water plant *Azolla*. Each tray was provided with 10 anopheline larvæ and placed in a small room which could be kept closed. Stoxal was blown into the room until each tray was covered with a light but distinct film. On the following day only two-tenths of the larvæ were dead in each tray. A Paris green control, with similar trays, surface débris, and larvæ, showed no survivors on the following day, although the film of one one-hundredths dilution was so light as to be hardly perceptible A similar experiment in which a much larger amount of stoxal was blown into the room gave fifteen-fifteenths killed by the larvicide in the grass, and twelve-fifteenths in the *Azolla*.

We made much use of these artificial breeding places in the tests of larvicides, since the conditions in them closely resembled those found in small natural pools, and the results of the experiments could be more closely observed than in those done under wholly natural conditions. In addition to those mentioned, several experiments were done in containers covered by dead leaves, by *Lemna*, or by the floating woody drift commonly found in natural waters. Almost always the proportion of larvæ killed by stoxal in these vegetation-covered waters was less than in controls not covered, and less than with very light treatments of the one one-hundredths dilution of Paris green, which almost invariably gave a complete destruction after one day. Trioxymethylene (Merck's) diluted with two volumes of fine road dust was tested in one experiment done on larvæ in floating woody débris. The proportion killed, 90 per cent, was the same as that in a parallel experiment done with stoxal.

In the laboratory experiments the mortality after the use of heavier doses of stoxal was usually greater than after the use of lighter doses, but not invariably so. In practically all cases the dosage was far in excess of any which could be economically used in field experiments. In all experiments a portion of the larvæ were killed; but there were usually some survivors after 24 hours. Larvæ placed in a thick dust which had remained on the water for 24 hours usually survived.

Paris green controls almost invariably caused complete destruction of the anopheline larvæ with a much smaller dose of the 1 to

100 dilution than that of the undiluted stoxal. The variability of the action of stoxal in laboratory experiments did not seem to be due to wind, temperature, or sunlight, except as these factors may have affected the activity of the larvæ. There was no evidence of variability of the quality of the larvicide taken from different containers. Dosage of the larvicide and the voracity of the larvæ seemed to have been the more important factors. That the larvæ were ingesting food during these experiments was indicated by their almost complete destruction in the Paris green controls.

FIELD EXPERIMENTS—ANOPHELES

In some preliminary field experiments a large dosage of stoxal was blown by a hand duster directly on very small shallow pools containing *Anopheles* larvæ (*A. quadrimaculatus*). The proportion killed was large, but the pools were drying up so rapidly that the exact proportion destroyed was hard to estimate.

In a second experiment a pond 3,150 square feet in area was treated with 350 cubic centimeters, about 5¼ ounces, of stoxal. The pond swarmed with top minnows, and was partly covered by *Jussiæa* in which *Anopheles* larvæ occurred in small numbers. In the treatment of so small an area a part of the larvicide was necessarily lost by being blown ashore, but enough was deposited to leave a very distinct film on the water over the whole area. The pond was examined on the day after treatment and about 40 per cent of the larvæ were found surviving. Four days later the pond was again examined and the number of larvæ found was about the same as on the day following the treatment. The conditions of this experiment were hardly such as to make a fair test of the proportion killed by the larvicide, since the numbers of larvæ, estimated by dipping, were too few to provide a reliable comparison. The experiment showed clearly, however, that a relatively heavy film of stoxal in water, even where the larvæ were very accessible to the powder, did not give a very efficient result.

We found a terrain more favorable for quantitative experiments in a swampy area formed by a series of hillside springs. This area had many small pools, free from fish, and teeming with *A. punctipennis*, in which the larvæ could be more or less definitely counted. There was little vegetation high enough to obstruct the spread of the dust, and woods partially protected the swamp from winds.

We outlined definite parcels of ground for treatment, selecting and marking a series of pools, "stations," in which the numbers of larvæ were counted. The day after treatment the area was revisited and the diminution of larvæ estimated, not only by the decrease in the several stations, but by the numbers found in random dips taken

before and after treatment. The results of these experiments were as follows:

May 23, 1927: Area 1,200 square feet. Treated with 4 ounces of undiluted stoxal spread by a hand duster. Some of the dust was undoubtedly lost by being carried beyond the treated area by winds, but examination of the several pools after treatment showed a very distinct film over the whole area. Approximately 150 larvæ were found in 11 stations before treatment. After treatment approximately 83 were found, a diminution of nearly 50 per cent in 24 hours.

May 26, 1927: A second area, of 600 square feet, was marked out in another part of the same swamp. This was treated with 5 ounces of undiluted stoxal. A warm, cloudless day; about the same amount of wind as during the last experiment. Average temperature of 8 pools, 92° F.

A distinct film of stoxal was seen on each of the marked pools. Twelve stations before treatment gave 102 larvæ. The day after treatment 25 larvæ were found in the same stations, a diminution of about 75 per cent. A series of random dips taken before and after treatment gave a diminution of approximately 65 per cent.

On the same date another area of 600 square feet was marked off and treated with Paris green as a control on the stoxal. Two hundred and fifty cubic centimeters, or approximately 12 ounces, of a 1 to 100 dilution in road dust, containing 30 grains (2 grams) of Paris green, was applied to this area. Six stations before treatment gave 27 larvæ, and 10 random dips, 10 larvæ. The day following treatment not a single larva could be found in any of the stations, and only two very small ones in a large series of random dips.

June 8, 1927: An area of 800 square feet was treated with 530 cubic centimeters, or 8 ounces, of undiluted stoxal. Six stations before treatment gave 51 larvæ. The day after treatment these stations gave 8 larvæ, a reduction of about 85 per cent. The diminution as measured by random dips taken before and after treatment was approximately 75 per cent.

On the same date another area was marked out and treated with trioxymethylene (Merck's), 3 ounces diluted with two volumes of fine sand. Six stations before treatment gave 60 larvæ; the same stations the day after gave 6 larvæ, a reduction of about 90 per cent. The reduction as measured by a series of random dips was approximately the same.

A mechanical hand duster was used in all of these swamp experiments and great pains were taken to get the dust spread as evenly as possible, and to avoid loss by wind. In only the last experiment, that of June 8, was the result with stoxal at all satisfactory, in which the use of one-half pound on an area of 800 square feet gave a reduction in the number of larvæ of about 85 per cent. If one-half of the dust

had been lost by being carried by the wind beyond the treated area, the amount used would still be at the rate of about 14 pounds per acre.

EXPERIMENTS WITH CULICINE LARVÆ

In our experience stoxal gives rather unsatisfactory results as a larvicide for culicine mosquitoes. In a laboratory experiment, larvæ of *Orthopodomyia signifer* and of *Culex quinquefasciatus* were exposed in developing trays to stoxal dust. Enough was added to make a heavy brown film. The water was about half an inch deep in each tray. In one tray the water was stirred immediately after dusting; in the other it was left untouched. At the end of 20 hours there were but one or two dead in each tray out of an original number of 40 larvæ per tray. There was little difference between the two trays, and both were like an untreated control. At the end of 44 hours the number of survivors in all trays was about the same as at the end of 20 hours. Eggs hatched out and produced healthy larvæ in a stoxal-containing tray on the day following treatment.

In field experiments a distinct film blown over shallow pools containing *Culex testaceus* (*C. territans*) caused a very inconsiderable mortality even in a pool stirred immediately after dusting. The best result we obtained was in a cement tank about 7 square yards in area and 20 inches deep. Seven teaspoonfuls, the teaspoon rounded full, about 50 cubic centimeters or nearly 1 ounce of stoxal was dissolved in water and spread over the surface of the tank. The water in the tank was not very foul and contained larvæ of *Culex quinquefasciatus*. On the following day there were still a few surviving larvæ, but the reduction was about 90 per cent.

Roubaud (3) has recommended the use of stoxal mixed with sand for some conditions. We had an opportunity in New Mexico for testing sand-diluted stoxal in a borrow-pit where larvae of *Aëdes dorsalis* were abundant. The area treated was about 3 by 12 yards in extent; the water, only 1 to 2 inches deep in the middle, was turbid and somewhat foul, as is frequently the case with culicine breeding-places. The larvae were nearly full-grown, and the numbers varied from about 40 to 100 per square foot. The pool was treated with 75 c. c., or approximately 1.1 ounces of stoxal thoroughly mixed with 19 parts of dry sand. The larvicide was spread at mid-day in full sunshine. The temperature of the water at the surface was 96° F. One hour after the pool had been treated a light shower fell, a little more than enough to lay the dust. The next day about 50 per cent of the larvae were still surviving. Many of them had pupated.

We made many tests of stoxal and trioxymethylene in a series of fire barrels. These barrels contained water having a depth of from

20 to 26 inches, and a superficial area of about one-fourth square yard. The water varied greatly in degree of foulness; in some barrels it was nearly clean, but in most of them the water was dark in color and rich in organic matters. Most of the barrels were indoors, but two stood in the open, and one contained algæ.

All contained larvæ of *C. quinquefasciatus* and some, in addition, *Aëdes ægypti* (*Stegomyia fasciata*). The larvæ occurred in varying numbers, but were usually very plentiful and of all sizes.

We began the series of tests with stoxal using a rounded teaspoonful, or about 6 cubic centimeters, per barrel, a dose about four times larger than that recommended in the directions which accompany the larvicide. This dosage proved to be wholly inadequate, and was gradually raised to 20 and finally to 30 cubic centimeters per barrel, the last dose being about 20 times that recommended. In a few tests the stoxal was simply spread over the surface of the water, but in most of the tests, including those with the higher dosage, the larvicide was either dissolved in water before spreading, or the water was well stirred immediately after the larvicide had been applied.

Comparative tests were made on other barrels with trioxymethylene in doses varying from 2½ to 30 cubic centimeters per barrel. This substance was applied in the same way as stoxal. Both trioxymethylene and stoxal were used undiluted

The effects of these larvicides were observed on the day following their application, and in some cases on the third day as well. In nearly every case the results were disappointing, the proportion of larvæ destroyed being so small as to hardly warrant the trouble of application, especially when other cheaper and more efficient larvicides are available for such breeding places. The higher doses may have somewhat diminished the numbers of the larvæ, but the proportion surviving was so large that the results should rank as a failure. The only success was obtained in a barrel containing relatively clear water which was treated with a large dose of trioxymethylene.

Some 18 different experiments were made on these barrels. We kept in mind the possibility of rendering the larvæ resistant by repeated small doses, and for later experiments used new barrels.

COST

Stoxal is quoted by the American manufacturers at 51 cents per pound in 25-pound containers for lots of less than 100 pounds, or 50 cents in 100-pound lots. The lowest quotation we have received of Merck's trioxymethylene is 80 cents per pound in 25-pound lots. Probably a lower quotation would be made for larger lots, and possibly for a product of less, but sufficient, purity. Paris green has been quoted at 21 cents per pound, in 100-pound lots, and 23 cents in 25-pound lots.

In our field experiments against *Anopheles*, stoxal distributed at the rate of 27 pounds per acre gave an efficiency of 85 per cent. Smaller amounts gave a much lower rate of destruction. The Paris green treatment of May 26, affording an efficiency of nearly 100 per cent, required slightly over 3 pounds of Paris green per acre, the 3 pounds being one one-hundredth of the dilution used. The trioxymethylene treatment, affording an efficiency of nearly 90 per cent, required 10.2 pounds of trioxymethylene per acre. If the dust lost by windage in these experiments be put at 50 per cent, the cost of all treatments would be reduced by half, the ratio of loss being about the same for each larvicide.

It is evident that the "minimum active dose" of one-fourth pound to 2½ acres as described in the directions for the use of stoxal can not be expected to destroy a very high percentage of larvæ. The frequent repetition of such light doses would hardly mend matters, for the cost of spreading is a large item in any larvicidal work. Further, according to Roubaud (3) larvæ surviving a sublethal dose of trioxymethylene acquire a resistance to the poison which lasts some days. He recommends, therefore, that the treatment should not be repeated too frequently, not oftener than once a week during hot weather.

It would seem that stoxal has a very limited field of service in this country, at least. For culicines, there are few places where oil or fish would not be more economical, and in such places trioxymethylene alone, or diluted with some inexpensive dust as originally recommended by Roubaud, should be much cheaper than, and fully as efficient as, stoxal, which consists essentially of trioxymethylene diluted with an inert dust. In the case of *Anopheles*, wherever a dust larvicide is indicated, Paris green is certainly far cheaper than stoxal. In this country, at least, *Anopheles*-producing waters where Paris green is unavailable on account of its poisonous properties are few. In the experiment of May 26, above described, the area treated by Paris green was invaded by cattle and mules, which pastured there, immediately after the spreading of the dust. There were no untoward effects, and none was expected, for in order that even a fraction of a 30-grain dose be ingested, a single animal would have to eat all the grass and drink all the water over the entire treated area of 600 square feet.

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CURRENT WORLD PREVALENCE OF DISEASE

REVIEW OF THE MONTHLY EPIDEMIOLOGICAL REPORT PUBLISHED JUNE 15, 1927, BY THE HEALTH SECTION OF THE LEAGUE OF NATIONS' SECRETARIAT[1]

Plague incidence continued low during April and May in practically all endemic centers, according to the data received by the health section of the League of Nations' Secretariat and published in the Monthly Epidemiological Report for June. Very few ports reported any cases or deaths to the Far Eastern Bureau during the five weeks ended May 28. One case was reported at Port Said the last week in April; one at Bangkok the week ended April 14; 12 cases were reported at Colombo during the five weeks; and, in India, only Bassein, Bombay, Calcutta, and Rangoon reported deaths, Bombay, with 81 deaths, being the only port having any considerable number.

The latest figures available for the Provinces of India are for the four weeks ended April 9, and they indicate the most favorable plague situation on record for India at this season. The improvement over previous years was most marked in the Punjab and in the United Provinces, in both of which the disease ordinarily reaches its maximum incidence during April. "The winter and spring have been unusually dry in the whole of northern India west of Bihar," says the Report, "and the drought has undoubtedly helped to check the progress of plague."

TABLE 1.—*Deaths from plague in the Provinces of India in the four weeks' period March 13 to April 9, 1927, and the corresponding period of preceding years*

Province	1922	1923	1924	1925	1926	1927
	Mar. 12–Apr. 8	Mar. 18–Apr. 14	Mar. 16–Apr. 12	Mar. 15–Apr. 11	Mar. 14–Apr. 10	Mar. 13–Apr. 9
Northwest frontier	0	8	778	27	26	31
Punjab	1,359	6,856	29,467	7,458	16,258	1,562
Punjab States	225	603	2,303	556	2,580	520
Delhi	0	1,054	890	10	84	13
United Provinces	3,686	16,507	9,597	9,983	8,522	2,474
Bihar and Orissa	2,351	7,181	1,429	1,320	1,588	1,390
Bengal and Assam	32	36	7	0	0	0
Central Provinces	556	2,420	1,291	632	792	683
Madras Presidency	477	600	79	123	90	59
Hyderabad	26	786	138	129	697	35
Mysore	115	224	37	18	205	21
Bombay Presidency	416	1,640	485	437	460	174
Burma	700	582	310	306	415	357
Other Indian States	116	442	601	380	906	91
Total	10,059	38,939	47,412	21,379	32,633	7,410

Plague reappeared in May in southern Tunisia, where 92 cases were reported during the first 20 days in inland localities of the district of Susa and Sfax.

In Madagascar, the reported cases of plague declined from 236 in March to 156 in April.

[1] From the Office of Statistical Investigations, U. S. Public Health Service.

Cholera.—An "explosive outbreak" of cholera occurred in the southern part of Bombay Presidency, India, at the end of March, and has been the most severe for many years in that part of India. The disease had been practically absent from Bombay Presidency for two years, and serious outbreaks in that section have rarely occurred before August. Only 33 cases were reported in the week ended March 19, but in the following week there were 2,224 cases and 801 deaths. During the two weeks ended April 9, 5,924 cases and 2,591 deaths were reported in the districts of Belgaum, Dharwar, and Bijapur, with an indicated case fatality of 44 per cent.

No other part of India has reported any unusual prevalence of cholera. Outside of Bombay Presidency, there were 5,714 deaths from cholera in India during the four weeks ended April 9, as compared with 8,254 in the corresponding period of 1926. In Bengal, the cholera incidence was less than half as high as in the corresponding period last year.

In French Indo-China there was a serious outbreak of cholera in April in Tonkin, where 1,356 cases were reported during the month. The disease was prevalent, but not epidemic, in Cochin-China and Cambodia, and toward the end of the month also in parts of Annam.

Haiphong was the port most severely infected with cholera in the Far East in May; 728 cases and 631 deaths were reported during the three weeks ended May 21. Cases were reported during these three weeks also at Saigon (76 cases), Turane, Bangkok, Calcutta (221 deaths), Negapatam (28 deaths), Rangoon, and Bassein.

Yellow fever.—Cases of yellow fever continued to be reported from time to time at certain localities on the west coast of Africa. In the Gold Coast, 31 cases were reported in February, March, and April. The disease also reappeared in Senegal in May, where no cases had been reported since January. There was 1 fatal case on May 22 at M'bour, and 4 fatal cases were reported between May 22 and 29 in the district of Tivaouane. In the French mandated territory of Togo, at Lome, 6 fatal cases were reported between May 7 and 24; and in Dahomey, at Porto Novo, 2 fatal cases were reported on May 26 and May 29, respectively.

Smallpox.—In European countries, other than Great Britain, France, Spain, and the Union of Socialist Soviet Republics, only 75 cases of smallpox were reported during the first quarter of 1927, or about half as many as in the corresponding period of 1926. In 18 countries, no case was reported in the first three months of 1927. In France, there was a considerable increase in smallpox during the past winter, 227 cases having been reported in the fourth quarter of 1926, and 170 cases in the first quarter of 1927. No data for 1927 are available for Spain and the Union of Socialist Soviet Republics,

but in both countries smallpox has been declining for several years. In England and Wales, smallpox cases have shown a marked increase during the past winter, and 6,166 cases were reported in the first quarter of 1927, as compared with 3,380 cases in the first quarter of 1926. The number of cases was diminishing in May, but the incidence was still in excess of that for previous years.

TABLE 2.—*Smallpox cases notified in Europe, 1924–1927* [1]

Country	Annual totals			First quarter 1926 and 1927	
	1924	1925	1926	1926	1927
Germany	16	24	7	1	1
England and Wales	3,765	5,365	10,155	3,380	6,166
Belgium	31	12	13	3	0
Bulgaria	5	0	1	0	2
Denmark	25	0	0	0	0
Scotland (16 principal towns)	4	2	0	0	61
Spain (deaths)	1,214	851	114	76	------
Estonia	4	5	6	0	0
Finland	1	2	1	0	0
France	210	454	554	164	170
Gibraltar	6	3	0	0	0
Greece	250	23	104	36	47
Hungary	1	2	1	0	0
Italy	30	204	112	12	8
Latvia	25	17	3	0	0
Lithuania	58	12	3	1	1
Luxemburg	6	0	2	0	0
Malta	0	84	20	20	0
Norway (towns)	0	1	0	0	0
Netherlands	3	2	13	3	3
Poland	861	77	74	24	10
Rumania	9	28	7	3	0
Kingdom of the Serbs, Croats, and Slovenes	330	14	4	1	3
Sweden	1	0	0	0	0
Switzerland	1,234	331	57	41	0
Czechoslovakia	2	1	1	1	0
Ukraine	1,188	501	274	77	------
Union of Socialist Soviet Republics (other European territories)	20,412	10,927	[2] 4,052	1,709	------
Algeria	483	1,747	2,483	847	557
Egypt	799	762	2,677	891	149
Tunis	606	1,270	198	123	28

[1] No case of smallpox was reported in the following countries: Austria, Danzig, Irish Free State, Saar Territory.
[2] Data for October have not been received.

The prevailing type of smallpox in England is very mild, and deaths are extremely rare. "The mild type of smallpox seems to have made its appearance in England and Wales in 1919," states the Report. "It was, however, only in 1921 that it became so much more prevalent than the severe type that it affected the case mortality rate of the whole country. Smallpox, which had given rise to the very serious epidemics in 1893 and in 1902, had become fairly rare since 1906. The case mortality oscillated around 11 per cent up to 1920. In 1921, it fell to 1.6 and was 2.8 in 1922. Of the 27 deaths, occurring in 1922, 24 resulted from an outbreak of 78 cases in London and its neighborhood. Apart from this outbreak, the case mortality was only 3 per thousand as during the two following years; in 1925 and 1926 it was less than 2 per thousand."

Epidemic prevalence of smallpox exclusively of the mild type has been met with on the Continent only in Switzerland. During the Swiss epidemics from 1921 to 1925 the fatality was about one per thousand cases. Elsewhere the severe type is more common. In eight continental countries reporting both cases and deaths, 129 cases and 14 deaths were reported in 1926, giving a case fatality of 11 per cent.

The following table, showing the vaccinal condition of smallpox cases in England in 1925, reprinted in the Epidemiological Report from the Annual Report of the Chief Medical Officer of England and Wales for 1925, is of considerable interest. It shows conclusively that successful vaccination, if of sufficiently recent date, confers immunity from smallpox. The increasing number of cases among vaccinated persons in the older ages shows how the protection of vaccination gradually wears off. The cases among vaccinated persons at ages from about 25 to 35, and to some extent in older age groups, is undoubtedly lowered by the vaccination of soldiers during the war, with the result that large numbers of men had been vaccinated more recently than would otherwise have been the case.

TABLE 3.—*Vaccinal condition of cases of smallpox occurring in England and Wales during 1925*

Age	Vaccinated as evidenced by scars A	Unvaccinated B	Vaccinated during incubation period C	Ratio A B
Under 5	0	402	50	0
5–9	0	881	44	0
10–14	5	1,151	49	0.004
15–19	29	695	38	0.042
20–24	37	360	19	0.10
25–29	27	229	8	0.12
30–34	46	136	5	0 34
35–39	85	73	5	1.16
40–49	291	104	2	2.80
50–59	268	77	2	3.48
60–69	108	21	3	5.14
70 and over	29	3	3	9.67
Total	925	4,132	228	0.224

Influenza.—A comparison of the mortality from influenza in small and large towns during the first quarter of 1927 in the Netherlands, in England and Wales, and in Switzerland shows that the mortality was higher in the small communities.

TABLE 4.—*Mortality attributed to influenza in certain countries, according to size of communities, during the first quarter of 1927*

Country and size of community	Population in thousands	Deaths from influenza	Rate per 100,000
The Netherlands:			
Over 20,000	3,492	1,086	31.1
Under 20,000	4,035	2,370	58.7
Total	7,527	3,456	45.9
England and Wales.			
Over 50,000	19,411	7,477	38.5
20,000-50,000	5,056	2,412	47.7
Total	24,467	9,889	40.4
Switzerland			
Over 50,000	781	393	50.3
Under 50,000	3,140	1,952	62.2
Total	3,921	2,345	59.8

In Switzerland, if the canton of Geneva is excluded, the mortality in towns over 50,000 becomes 41 per 100,000, as compared with 61 in the smaller communities.

Also in Scotland the mortality in the towns was lower than that in the smaller communities and rural districts. The death rate from influenza during the first quarter of 1927 was 18 per 100,000 in towns of over 30,000 population and 35 per 100,000 in the remainder of the country.

Syphilis.—Statistics of reported cases of syphilis for a number of years are given for the Scandinavian countries and Australia in the Epidemiological Report. Satisfactory reporting of this disease is difficult to obtain, and most countries have not yet made it notifiable. In the Scandinavian countries a system of confidential notification is used and, according to the Report, the statistics obtained probably are as complete as for measles or whooping cough and can at least be used to show the trend of the disease from year to year.

TABLE 5.—*Syphilis cases reported in various countries, 1919-1926*

Year	Denmark		Sweden		Norway		Norwegian towns		Australia	
	Cases	Rate [1]	Cases	Rate [1]	Cases	Rate [1]	Cases	Rate [1]	Cases	Rate [1]
1919	4,471	147	6,451	110	2,138	82	1,814	234		
1920	4,329	141	3,725	63	1,687	64	1,501	191		
1921	3,955	121	2,596	44	1,651	61	1,285	162	4,232	84
1922	2,611	77	1,573	26	1,106	41	1,138	143	3,272	64
1923	2,496	75	1,189	20	1,099	40	906	114	2,573	49
1924	2,431	72	922	15			837	105	2,311	43
1925	2,281	67	764	13			803	101		
1926	2,601	76	981	16			798	100		

[1] Rate per 100,000 inhabitants.

The number of cases of syphilis reported in the 3 Scandinavian countries increased markedly from 1913 to 1919. "From 1920 to 1923 the incidence decreased to about one-half or less, probably largely under the influence of the generalization of modern methods of salvarsan treatment" states the Report. After 1923 the decrease was much smaller, and there was even a slight increase in Sweden and Denmark from 1925 to 1926. The Australian statistics also show a reduction of about one-half from 1921 to 1924, and the rates correspond closely to those of Norway for the years 1919 to 1922.

"The preponderance of the syphilis incidence among males over females is, at least in the Scandinavian countries, smaller than stated by most authors," says the Report. In 1926, there were 497 cases of acquired syphilis reported among men and 399 among women in Denmark. In Sweden, during the same year, there were 613 cases of acquired syphilis reported in men and 299 in women. The excess of the incidence of gonorrhea among men was much greater.

SEASONAL AND AGE FACTORS IN MEASLES

A study of case reports from 10 States during the five-year period 1922–1926, made by the Metropolitan Life Insurance Co., shows that, although measles is a "cold-weather disease" from the standpoint of the relative danger of contracting it, from the standpoint of the relative danger of dying from it when once contracted, it is decidedly a "hot-weather disease." Without exception these reports show that the peak of measles prevalence occurred during the late winter and spring months, and that with the coming of warm weather the case incidence dropped very sharply and continued the decline to a low point, which was reached in September. On the other hand, the case fatality rate was highest in the summer, the records uniformly showing that a greater proportion of measles cases terminated fatally during August and September than at any other time of year.

Another contrast between maximum morbidity and maximum case fatality rate in measles is shown in relation to age—the maximum prevalence occurring in the fifth year, whereas the maximum case fatality rate occurs in the first year of age.

While the actual death rate—that is, the number of deaths per 100,000 living—reaches its maximum in the second year of life, there are many more cases in the third, fourth, and fifth years than in the second year.

The following figures showing the case fatality rate of measles during childhood are based on a study made by the company in New Jersey during the six-year period 1919–1925:

Age	Deaths per 1,000 cases
Under 1 year	125.3
1 year	71.2
2 years	17 9
3 years	9.9
4 years	4.9
5 to 9 years	1.7
10 years and over	4.3

It is worthy of emphasis, however, that, regardless of the age or season when the disease is contracted, the period of convalescence is the most important stage of measles. It is when the child is recovering that he is the weakest from the effects of the disease, and it is then that dangerous complications are most likely to develop.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Public Health Engineering in European Countries. George W. Fuller, consulting engineer, New York City. *American Journal of Public Health*, vol. 17, No. 5, May, 1927, pp. 466–469. (Abstract by D. W. Evans.)

England.—Since 1919 the Ministry of Health has had jurisdiction over problems relating to sewerage, sewage disposal, river pollution, disposal of industrial wastes and their bearing upon water-supply projects. They also have jurisdiction over certain housing activities and supervision of collection and disposal of refuse. Inquiries or public hearings are held and encouraged in order to bring out local viewpoints. Valuable data are assembled in this manner. Sewage treatment projects have gone forward since the war as the result of financial aid from the central government and to aid in the solution of the unemployment situation. Most surface waters are filtered by slow sand beds. Mechanical filters are used in several places as preliminary filters to the slow sand filters. Chlorination is rarely practiced except in emergency cases.

France.—Water supplies are mostly from underground sources. Sewage from larger communities is disposed of on sewage farms. All projects are subject to approval by Superior Council of Public Health.

Holland.—The central government has established a bureau which deals with design, construction, and operation of sewage disposal plants, particularly in respect to protection of shellfish layings and bathing beaches. Chlorination is used to some extent.

Switzerland.—The individual state, or canton, is usually the agency for administering questions on public health, especially sewage disposal in order to divert pollution from water supplies, many of which are mountain streams or lakes. Treatment is seldom given the water supplies. Zurich uses both mechanical and slow sand filters in series. Chlorination is not used.

Germany.—The Imperial Health Board has jurisdiction over public health engineering and is limited to nation-wide problems such as epidemics and the pollution of interstate streams. The best known central authority is that of the Institute of Hygiene of Prussia, comprising the bureaus of engineering, chemistry, and biology. Its activities are largely the development of education relating to public health work. The Emscher and Ruhr drainage districts are very effective in their work. Direct representation is given to municipal and industrial concerns related to the pollution question. Chlorination is practiced at a number of water works, particularly at Essen, when the wells are subject to flooding. Ham-

burg uses chlorine in connection with slow sand filters on account of lack of funds for coagulants. Few plants having a relation to public health have been built in Germany since the late war.

Typhoid in Large Cities of the United States in 1926 (Fifteenth Annual Report). Special article. *The Journal of the American Medical Association*, vol. 88, No. 15, April 9, 1927, pp. 1148–1150. (Abstract by C. H. Kibbey.)

This is a most interesting and instructive survey of the typhoid fever mortality in the 78 cities of the United States that had a population in 1926 of 100,000 or more. The total 78 cities were divided into groups according to geographic location, and the group mortality rate is shown below:

Geographic division	Population of cities	Death rate per 100,000	
		1926	1925
New England States	2,521,608	1.51	2.37
Middle Atlantic States	11,399,000	2.12	3.01
South Atlantic States	2,220,488	5.38	5.71
East North Central States	8,117,000	1.69	2.19
East South Central States	836,000	14.47	14.30
West North Central States	2,479,000	2.22	3.31
West South Central States	1,478,000	11.69	13.27
Mountain and Pacific States	3,430,795	1.98	2.19

Attention is called to the remarkable showing made by the New England group as being one which would be creditable to any similar population anywhere in the world. Of the 12 New England cities considered in the group, and presenting a group death rate of 1.51 per 100,000, 7 report a typhoid death rate of less than 1 per 100,000. New Bedford and Lowell of this group have had rates below 1 per 100,000 for two years in succession, the average in Lowell for the two years being less than 0.5 per 100,000, or less than one-twentieth of the average for the years 1911 to 1915, inclusive.

Cambridge, with the best typhoid record in New England for the 16 years prior to 1920, stands out prominently with the highest death rate of the group for 1926, its rate for that year being 4.9 per 100,000.

Albany, Utica, and Yonkers, of the Middle Atlantic group, achieve the enviable distinction of having had no typhoid death in 1926. Rochester and Scranton had not only a higher typhoid mortality than in 1925, but presented a higher rate than for the two preceding five-year periods. Chicago establishes a new low record, the rate (0.8) being the lowest reported in 1926 for any American city with over 500,000 population. Toledo and Indianapolis continue to have rates considerably higher than the average.

The four cities in the East South Central group present for the second successive year a higher rate for the group than that of any other geographic division, although the fact that Memphis reports a lower rate than for previous years and the figure for Birmingham (8.5) is considered especially encouraging. Nashville, having suffered early in the summer from an old-fashioned typhoid epidemic, presented the highest rate of any American city (35). The highest rate in 1925 was 28.6 (Memphis), and the highest in 1924 was 41.2 (Memphis).

An honor roll of the 35 cities having a typhoid death rate below 2 per 100,000 is presented, with Albany, Utica, Yonkers, and Youngstown conspicuously at the head of the list with clean records of no typhoid deaths.

Public Health Engineering Progress in Palestine. Louis Cantor. *American Journal of Public Health*, vol. 17, No. 4, April, 1927, pp. 341–348. (Abstract by Chester Cohen.)

This article deals with the various influencing conditions affecting the problems of public health engineering in Palestine. The climatic conditions are discussed,

together with the various obstacles that are present in such regions where religious prejudices and centuries of backwardness have to be overcome. Malaria has been the prevalent disease for centuries, and preventive measures taken by the department of health consist of the following: (1) Town areas organized with control of prevention of mosquito-breeding, mainly of cistern, well, and cesspit origin; (2) drainage and reclamation of swamp areas forming extensive breeding grounds; (3) treatment of infected persons; (4) educational work among the people, giving information as to the origin and prevention of the disease.

The mosquito proofing of wells through covering and the installation of simple lift-type pumps, the draining of malarious areas, and other antilarval measures resulted in reducing the malaria death rate. As an example, in Jerusalem in 1918 there were 113 deaths from malaria, whereas in 1924 there were only 2 deaths from this cause.

Careful supervision of the water supply and disinfection through means of stabilized bleaching powder, where necessary, are practiced. The temporary charter of the town water supply does not justify the installation of automatic liquid chlorine installations.

Plans are being prepared for providing methods of sewage disposal for the larger towns to take the place of disposal through the use of cesspools. Improvements in house sanitation and plumbing will be a necessary portion of the activities of the department. Classes of instruction for architects, engineers, and plumbers, and sanitary exhibitions and health shows in the different towns are important factors in stimulating this work and in creating a demand for these improvements. Arrangements for scavenging and refuse disposal in larger towns and villages are being perfected. The refuse from the garbage destructors is used as a land fertilizer and is in considerable demand.

"In spite of the many difficulties, previously referred to, as regards the complicated political, religious, economic, and social problems, in overcoming the rooted prejudices of ages, the department of health is succeeding in placing Palestine upon a sure footing of modern hygienic and sanitary science."

Solving Sanitary Engineering Problems of Tuberculosis Hospitals. C. A. Holmquist and Charles R. Cox, division of sanitation, New York State Department of Health. *Modern Hospital*, vol. 28, No. 3, March, 1927, pp. 75–79. (Abstract by Charles R. Cox.)

Most of the problems involved in the design, construction, and operation of tuberculosis hospitals are specific and are thus understood by experienced hospital authorities. This is not true, however, in regard to the special problems of a sanitary engineering character. The paper summarizes the sanitary engineering aspect of the selection of hospital sites and suitable water supply and refuse and sewage disposal systems for tuberculosis hospitals.

The site should be selected to afford convenience to the staff, patients, and their friends, and access to available markets. The securing of sufficient area for the desirable distribution of buildings, isolated sites for nuisance-producing structures, dairy and poultry farms, and vegetable gardens is advocated. A well-drained site with porous soil is recommended, although high altitudes are not essential, because it is pointed out that altitude itself has little connection with the cure of tuberculosis. A variable, bracing climate with moderate to cool temperatures is advocated. The possibility of carrying on heliotherapy at all altitudes is indicated, provided cloudy weather is not too prevalent.

The use of properly protected wells or springs as sources of water supply is advocated instead of streams, ponds, or lakes, because surface water should be treated even though trained operators are not provided at most small water purification plants. The methods of protecting dug, driven, and drilled wells are discussed. Slow and rapid sand filters, chlorination plants, and pumping

equipment are also discussed. The careful supervision essential for satisfactory results with such equipment is stressed.

Disposal of sewage by subsurface drainage systems is advocated when feasible. The statement is made that typical sewage disposal methods may not be capable of removing *Bacillus tuberculosis*, which is known to persist at least 10 days in the septic sludge of tanks and to resist the effect of very large concentrations of chlorine. The cost and difficulty of sewage disposal may warrant the selection of another hospital site at a more favorable location. The possibility of housing sewage disposal equipment and providing ventilation equipment with deodorizers is mentioned.

Disposal of infected objects such as sputum cups and handkerchiefs by burning in special incinerators or in the boiler plant of the institution is advocated. Disposal of garbage by burial, incineration, and hog feeding is mentioned.

Cooling Milk. T. J. McInerney, assistant professor of dairy industry, Cornell University. Annual Report, 1927, Pennsylvania Association of Dairy and Milk Inspectors, pp. 114–123. (Abstract by F. J. Moss.)

Many dairymen find it difficult to understand why they are expected to keep milk cold, when it is heated during the processing at the dairy plant. This clearly shows a lack of appreciation of the real reason for cooling milk and keeping it cold, and also a lack of understanding of the heating process. Rapid cooling of milk to 50° F., or lower, is imperative if low bacterial count and high keeping quality are desired. Pasteurization by the dealer can not be expected to correct the results of careless handling by the producer.

As air and water are the two most commonly used means of cooling milk, an experiment was made to determine their relative efficiency. Five cans of milk having a temperature of 95° F. were treated in the following manner: Can A was placed in a tub of ice water, the depth of water being sufficient to reach above the breast of the can. Enough ice was used that the water temperature was kept at about 36° F. The milk was stirred every half hour, when the temperature was taken; can B stood in a refrigerator, the temperature of which was 0° F. Milk was stirred every half hour, and temperature noted; cans C, D, and E stood in a refrigerator having an air temperature of 30° F. Variations in the treatment were: C—Still air, milk stirred every half hour; D—In strong wind (large electric fan), milk stirred every half hour; E—Still air, milk unstirred. A graph is given which shows the results of the five different treatments outlined above. The most interesting thing brought out in the graph is the extreme rapidity of cooling by means of ice water at 36° F. as compared with air at 0° F. Occasional stirring of the milk is shown to hasten the cooling process.

An example is given showing the method of calculating the approximate amount of ice needed when milk is cooled by setting the cans in a tank of ice water. A cement tank, insulated on all sides with 3-inch cork board, provides one of the most permanent and economical units for cooling and storage.

Insulation of cans during transportation is considered both desirable and feasible.

Carriers Excluded from Handling Oysters. Millard Knowlton. State of Connecticut *Health Bulletin*, vol. 41, No. 3, March, 1927, pp. 67–68. (Abstract by E. C. Sullivan.)

The Connecticut State Sanitary Code requires that specimens of feces and urine from oyster shuckers and packers be found negative for typhoid fever and the paratyphoids before cards are issued permitting them to handle oysters. This procedure was commenced in 1925, when 298 cards were issued, and continued in 1926, when 251 cards were issued.

Specimens have been examined either in the laboratory of the Connecticut State Department of Health or in the laboratory of the New Haven Health Department. Altogether more than 600 specimens have been examined in the State laboratory during the two-year period. As a result of the laboratory

examinations, 5 paratyphoid carriers were discovered in 1925 and 1 paratyphoid carrier was discovered in 1926. All of the paratyphoid carriers discovered in 1925 were located in one city. Four of them were carriers of paratyphoid B and one of paratyphoid A.

Scarlet Fever Outbreak due to Infected Food. Clarence L. Scamman and others, *American Journal of Public Health*, vol. 17, No. 4, April, 1927. pp. 311–316. (Abstract by Chester Cohen.)

The Massachusetts Department of Public Health began an investigation to determine the cause of the simultaneous outbreak of a large number of cases of scarlet fever among the attendants at banquets from three geographically distinct localities. Suspicion was immediately directed towards lobster salad, which was the only food served at each of the three dinners. Although not all the cases were diagnosed as scarlet fever, the coefficient of association pointed strongly to the common article of food. The details of the investigation are given and the epidemiological data obtained are presented in a very interesting manner. Throat cultures were made from the employees who handled and prepared the salad. Six of the 33 employees gave positive cultures for hemolytic streptococci, which agglutinated with the serum of the rabbit immunized against the known scarlet fever strain. It was impossible to determine which of the six employees were directly responsible or how many of the six had harbored the streptococci prior to the date of the banquets. An interesting experiment was performed to determine whether or not a recently isolated strain of hemolytic streptococci, beta type, would remain viable in lobster meat and lobster salad during a period of 18 hours. Briefly, the experiments indicated that the streptococci could be recovered with ease from the lobster meat after having been incubated from 12 to 18 hours at 37° C., and it is even possible that an increase in numbers may have occurred during this period.

Epidemiological interest centers in the occurrence of outbreaks of scarlet fever and sore throat from a common source of infection with secondary cases of scarlet fever following contact with sore throat patients. Of the 592 persons attending these banquets, 138 persons developed illness. In 98 of the cases of illness, scarlet fever was diagnosed, and in the other 40 cases there was not sufficient evidence to warrant positive diagnosis. "It is a fair assumption that one of the employees of either the dealer or the caterer was harboring streptococci and infected the lobster at some time between midnight and noon, June 24 (the period of preparation of the salad). It is impossible to ascertain the identity of this person or the place and exact time the infection occurred."

Classification and Grading of Milk. Ernest Kelly. *American Journal of Public Health*, vol. 17, No. 3, March, 1927, pp. 224–226. (Abstract by Malcolm Lewis.)

Grading is a further refinement of inspection—inspection separating the food fit for consumption from the unfit; grading specifies certain superior qualities of a food already passed by inspection. The trend should be toward uniformity of grade requirements. Advantages of grading are: (1) Reward of dairyman who exceeds minimum legal requirements; (2) improvement at dairy farms stimulated by competition and better price commanded by higher grade; (3) allowing consumer to purchase grade of personal preference and according to individual means. Grading as a public health function should be confined to sanitary conditions and not concern commercial considerations of butter fat percentage and chemical composition above legal standards. Grades should be few to avoid confusion on the part of consumers as to their relative significance, and the difference between any two grades should mean a very real distinction in quality. Only milk that is fit for drinking purposes should be included in the grades. One grade of raw milk and two grades of Pasteurized milk are suggested as the maximum number allowable.

DEATHS DURING WEEK ENDED JULY 23, 1927

Summary of information received by telegraph from industrial insurance companies for week ended July 23, 1927, and corresponding week of 1926. (From the Weekly Health Index, July 28, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended July 23, 1927	Corresponding week 1926
Policies in force	67, 795, 816	64, 999, 105
Number of death claims	11, 211	11, 093
Death claims per 1,000 policies in force, annual rate	8. 6	8. 9

Deaths from all causes in certain large cities of the United States during the week ended July 23, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, July 28, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended, July 23, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended July 23, 1927 [2]
	Total deaths	Death rate [1]		Week ended July 23, 1927	Corresponding week 1926	
Total (67 cities)	5, 953	10. 5	[3] 11. 6	596	[3] 763	[4] 50
Akron	89			9	4	97
Albany [5]	43	18. 7	18. 0	4	1	83
Atlanta	59			9	21	
White	30			3	9	
Colored	29	(6)		6	12	
Baltimore [5]	189	12. 0	13. 3	20	26	62
White	156		12. 0	18	16	69
Colored	33	(6)	21. 0	2	10	31
Birmingham	59	14. 3	16. 3	6	5	
White	25		14. 7	1	3	
Colored	34	(6)	18. 8	5	2	
Boston	151	9. 9	13. 2	15	26	42
Bridgeport	31			1	5	19
Buffalo	114	10. 8	12. 4	16	18	67
Cambridge	21	8. 8	12. 8	2	2	36
Camden	31	12. 2	6. 4	3	2	52
Canton	14	6. 5	10. 0	3	2	71
Chicago [5]	534	9. 0	10. 5	60	69	52
Cincinnati	130	16. 5	16. 9	11	20	69
Cleveland	163	8. 6	9. 9	25	21	66
Columbus	76	13. 6	15. 2	3	8	23
Dallas	51	12. 7	11. 3	11	8	
White	45		10. 7	11	6	
Colored	6	(6)	15. 4	0	2	
Denver	53	9. 5	11. 3	5	7	
Des Moines	27	9. 4	12. 5	1	1	17
Detroit	199	7. 8	11. 4	29	57	46
Duluth	21	9. 5	12. 5	2	1	43
El Paso	27	12. 3	17. 7	4	6	
Erie	20			2	4	30
Fall River [5]	23	9. 0	8. 0	1	5	18
Flint	21	7. 7	11. 1	4	3	65
Fort Worth	29	9. 2	6. 2	2	0	
White	23		6. 3	2	0	
Colored	6	(6)	5. 5	0	0	
Grand Rapids	25	8. 2	9. 4	5	4	73
Houston	70			9	0	
White	50			7	0	
Colored	20	(6)		2	0	
Indianapolis	85	11. 9	11. 8	6	11	47
White	67		11. 0	5	11	45
Colored	18	(6)	17. 8	1	0	61
Jersey City	63	10. 2	10. 7	7	9	52
Kansas City, Kans	28	12. 5	12. 5	1	2	19
White	24		11. 9	1	1	22
Colored	4	(6)	15. 3	0	1	

[1] Annual rate per 1,000 population
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 66 cities.
[4] Data for 62 cities.
[5] Deaths for week ended Friday, July 22, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

Deaths from all causes in certain large cities of the United States during the week ended July 23, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, July 28, 1927, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended, July 23, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended July 23, 1927
	Total deaths	Death rate		Week ended July 23, 1927	Corresponding week 1926	
Kansas City, Mo.	83	11.3	12.0	4	6	
Knoxville	18	9.2		0		
White	12			0		
Colored	6	(6)		0		
Los Angeles	253			23	15	66
Louisville	81	13.2	16.8	4	16	34
White	66		14.8	3	12	29
Colored	15	(6)	27.7	1	4	70
Lowell	28	13.2	9.9	8	0	154
Lynn	14	7.0	12.5	2	3	53
Memphis	64	18.6	22.7	9	8	
White	33		15.1	8	2	
Colored	31	(6)	36.4	1	6	
Milwaukee	84	8.2	10.5	15	18	70
Minneapolis	71	8.4	9.4	6	9	34
Nashville [5]	44	16.6	19.4	4	10	
White	23		17.6	2	7	
Colored	21	(6)	24.1	2	3	
New Bedford	19	8.3	8.7	4	5	69
New Haven	34	9.6	9.5	2	2	28
New Orleans	133	16.4	14.3	16	22	
White	78		12.1	8	13	
Colored	55	(6)	20.6	8	9	
New York	1,150	10.0	10.8	105	121	43
Bronx Borough	157	8.8	9.4	15	8	48
Brooklyn Borough	363	8.3	10.1	37	52	38
Manhattan Borough	457	13.1	12.8	39	43	46
Queens Borough	127	8.2	9.4	12	12	51
Richmond Borough	46	16.3	13.1	2	6	37
Newark, N. J.	87	9.7	10.2	9	16	45
Oakland	42	8.2	9.2	3	3	35
Oklahoma City	40			5	3	
Omaha	50	11.9	12.1	3	6	33
Paterson	31	11.2	9.1	6	2	106
Philadelphia	454	11.6	10.3	36	38	48
Pittsburgh	102	8.3	12.8	9	24	31
Portland, Oreg.	58			4	0	42
Providence	49	9.1	11.2	5	6	42
Richmond	48	13.0	17.4	5	11	66
White	24		12.5	1	6	20
Colored	24	(6)	29.4	4	5	152
Rochester	52	8.4	10.1	4	1	34
St. Louis	193	12.0	13.6	11	28	
St. Paul	45	9.4	9.5	9	3	82
Salt Lake City [5]	30	11.5	11.4	2	4	30
San Antonio	70	17.3	15.3	8	12	
San Diego	33	15.0	18.0	2	5	43
San Francisco	152	13.8	12.0	8	7	50
Schenectady	15	8.4	7.3	1	0	30
Seattle	64			3	3	31
Somerville	11	5.6	9.9	0	5	0
Spokane	29	13.9	11.5	1	4	25
Springfield, Mass.	34	12.1	11.9	2	3	31
Syracuse	38	10.1	13.8	5	4	64
Tacoma	18	8.8	9.3	0	1	0
Toledo	52	8.9	12.4	6	7	58
Trenton	33	12.6	12.5	2	6	35
Utica	19	9.6	20.8	2	8	46
Washington, D. C.	124	12.0	14.5	13	12	75
White	72		10.8	7	7	59
Colored	52	(6)	25.3	6	5	110
Waterbury	17			1	5	24
Wilmington, Del.	29	12.0	7.1	2	1	50
Worcester	52	13.9	11.9	4	6	48
Yonkers	24	10.5	8.1	7	0	159
Youngstown	37	11.4	11.7	6	6	84

[5] Deaths for week ended Friday, July 22, 1927.

[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended July 30, 1927

DIPHTHERIA	Cases
Alabama	13
Arkansas	5
California	73
Colorado	4
Connecticut	23
Delaware	1
Georgia	21
Idaho	2
Illinois	78
Indiana	12
Iowa [1]	15
Kansas	8
Louisiana	14
Maine	2
Maryland [1]	32
Massachusetts	61
Michigan	40
Minnesota	30
Mississippi	10
Missouri [2]	16
Montana	1
Nebraska	3
New Jersey	57
New Mexico	1
New York [3]	35
North Carolina	17
Oklahoma [4]	10
Oregon	9
Pennsylvania	104
Rhode Island	6
South Carolina	16
South Dakota	2
Tennessee	12
Texas	15
Utah [1]	5
Washington	17
West Virginia	14
Wisconsin	40
Wyoming	1

INFLUENZA	Cases
Alabama	18
California	3
Connecticut	3
Georgia	17
Illinois	91
Indiana	7
Kansas	2
Louisiana	11
Massachusetts	4
Michigan	2
Mississippi	2
New Jersey	1
Oklahoma [4]	6
Oregon	9
South Carolina	100
South Dakota	1
Tennessee	2
Texas	14
Utah [1]	2
West Virginia	1
Wisconsin	12
Wyoming	2

MEASLES	Cases
Alabama	14
Arizona	230
Arkansas	6
California	77
Colorado	11
Connecticut	10
Delaware	1
Georgia	9
Illinois	81
Indiana	10
Iowa [1]	4
Kansas	77
Louisiana	16
Maine	25
Maryland [1]	9

[1] Week ended Friday.
[2] Exclusive of Kansas City.
[3] Exclusive of New York City.
[4] Exclusive of Oklahoma City and Tulsa.

MEASLES—continued	Cases
Massachusetts	151
Michigan	158
Minnesota	12
Missouri [2]	16
Montana	6
Nebraska	21
New Jersey	28
New Mexico	28
New York [3]	160
North Carolina	188
Oklahoma [4]	30
Oregon	28
Pennsylvania	134
Rhode Island	2
South Carolina	44
South Dakota	1
Tennessee	8
Texas	8
Utah [1]	2
Vermont	3
Washington	108
West Virginia	32
Wisconsin	124
Wyoming	3

MENINGOCOCCUS MENINGITIS	
Arkansas	1
California	5
Colorado	1
Illinois	3
Massachusetts	1
Michigan	7
Missouri	1
Montana	2
New Jersey	1
Oklahoma [4]	1
Oregon	1
Pennsylvania	2
Tennessee	1
Texas	1
Washington	2
Wisconsin	3

POLIOMYELITIS	
Alabama	1
California	59
Colorado	1
Connecticut	1
Illinois	6
Kansas	4
Massachusetts	1
Michigan	1
Minnesota	5
Mississippi	1
Montana	2
New Jersey	1
New Mexico	16
New York [3]	5
North Carolina	1
Oklahoma [4]	9
South Carolina	1
Texas	11
Utah [1]	1
Wisconsin	3

SCARLET FEVER	Cases
Alabama	11
Arkansas	2
California	53
Colorado	16
Connecticut	10
Georgia	5
Idaho	4
Illinois	75
Indiana	15
Iowa [1]	15
Kansas	17
Louisiana	5
Maine	7
Maryland [1]	15
Massachusetts	117
Michigan	73
Minnesota	53
Mississippi	7
Missouri [2]	22
Montana	10
Nebraska	7
New Jersey	36
New Mexico	8
New York [3]	64
North Carolina	30
Oklahoma [4]	19
Oregon	6
Pennsylvania	112
Rhode Island	3
South Carolina	8
South Dakota	10
Tennessee	14
Texas	8
Utah [1]	5
Vermont	3
Washington	21
West Virginia	42
Wisconsin	46

SMALLPOX	
Alabama	9
Arkansas	1
California	6
Idaho	4
Illinois	15
Indiana	24
Iowa [1]	12
Kansas	12
Michigan	15
Minnesota	2
Mississippi	6
Missouri [2]	4
Montana	1
Nebraska	3
New York [3]	3
North Carolina	12
Oklahoma [4]	7
Oregon	10
South Carolina	4
South Dakota	3
Tennessee	1
Texas	5
Utah [1]	3

[1] Week ended Friday.
[2] Exclusive of Kansas City and St. Louis.
[3] Exclusive of New York City.
[4] Exclusive of Oklahoma City and Tulsa.

SMALLPOX—continued	Cases
Washington	37
West Virginia	13
Wisconsin	11
Wyoming	2

TYPHOID FEVER

State	Cases
Alabama	63
Arkansas	23
California	19
Connecticut	3
Delaware	2
Georgia	72
Idaho	1
Illinois	53
Indiana	7
Iowa [1]	6
Kansas	15
Louisiana	23
Maryland [1]	26
Massachusetts	7
Michigan	19
Minnesota	5

TYPHOID FEVER—continued	Cases
Mississippi	31
Missouri [2]	15
Montana	6
Nebraska	1
New Jersey	12
New Mexico	9
New York [3]	11
North Carolina	78
Oklahoma [4]	50
Oregon	6
Pennsylvania	41
Rhode Island	1
South Carolina	113
South Dakota	1
Tennessee	165
Texas	9
Utah [1]	1
Washington	14
West Virginia	22
Wisconsin	2
Wyoming	1

[1] Week ended Friday.

[2] Exclusive of Kansas City and St. Louis.

[3] Exclusive of New York City.

[4] Exclusive of Oklahoma City and Tulsa.

Reports for Week Ended July 23, 1927

DIPHTHERIA	Cases
District of Columbia	7
Mississippi	4

MEASLES

District of Columbia	8
North Dakota	1

MENINGOCOCCUS MENINGITIS

North Dakota	1

POLIOMYELITIS

Mississippi	1
North Dakota	1

SCARLET FEVER	Cases
District of Columbia	5
Mississippi	3
North Dakota	21

SMALLPOX

District of Columbia	1
Mississippi	3
North Dakota	1

TYPHOID FEVER

District of Columbia	5
Mississippi	34

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
June, 1927										
Alabama	2	65	48	290	820	108	5	35	97	210
Idaho	4	7			163		0	25	34	8
Illinois	41	475	130	4	2,084	2	5	806	63	70
Kansas	3	35	2	1	1,253	2	5	169	74	31
Maine	0	9	14		339		1	88	0	9
Maryland	2	232	18	1	81	1	1	160	5	44
Mississippi		38	896	8,222	856	1,735	6	21	10	237
Montana	9	6	16		71		0	62	45	7
North Carolina	3	53		4	4,974		0	49	94	151
Ohio	9	388	54	7	467		2	750	197	50
Oklahoma [1]		24	70	205	875	65	4	43	161	153
Oregon	8	24	24	1	618		0	45	69	24
South Carolina	0	55	714	1,058	824	837	7	13	35	378
Washington	11	45			1,714		0	173	145	20
Wyoming	1				161		0	38	7	

[1] Exclusive of Oklahoma City and Tulsa.

June, 1927

	Cases
Chicken pox:	
Alabama	65
Idaho	18
Illinois	873
Kansas	217
Maine	59
Maryland	300
Mississippi	249
Montana	43
North Carolina	247
Ohio	6,706
Oklahoma	41
Oregon	74
South Carolina	214
Washington	265
Wyoming	9
Dengue:	
Alabama	4
Mississippi	8
South Carolina	11
Dysentery:	
Illinois	25
Maryland	3
Mississippi (amebic)	111
Mississippi (bacillary)	3,253
North Carolina	2
Oklahoma	99
Oregon	12
German measles:	
Illinois	84
Kansas	14
Maine	81
Maryland	19
Montana	3
North Carolina	42
Ohio	69
Washington	399
Wyoming	29
Hookworm disease:	
Mississippi	353
South Carolina	112
Impetigo contagiosa:	
Maryland	5
Oregon	1
Washington	1
Lead poisoning:	
Illinois	12
Ohio	9
Lethargic encephalitis:	
Alabama	4
Illinois	7
Kansas	2
Maryland	1
Montana	1
Ohio	4
Oregon	1
Mumps:	
Alabama	44
Idaho	12
Illinois	1,453
Kansas	67
Maine	18
Maryland	79
Mississippi	330
Montana	3

June, 1927—Continued

	Cases
Mumps—Continued.	
Ohio	670
Oklahoma	19
Oregon	59
South Carolina	14
Washington	150
Wyoming	2
Ophthalmia neonatorum:	
Illinois	37
Maryland	3
Mississippi	13
Ohio	132
Oklahoma	1
Paratyphoid fever:	
Illinois	2
Kansas	2
Maine	1
South Carolina	15
Puerperal septicemia:	
Illinois	4
Mississippi	28
Rabies in animals:	
Idaho	2
Maryland	10
Mississippi	6
Oregon	2
South Carolina	18
Rabies in man.	
Alabama	1
Rocky Mountain spotted or tick fever:	
Idaho	6
Montana	10
Oregon	5
Washington	1
Wyoming	41
Scabies:	
Oregon	4
Septic sore throat:	
Illinois	9
Kansas	1
Maryland	7
North Carolina	9
Ohio	92
Oregon	6
Wyoming	3
Tetanus:	
Illinois	7
Kansas	3
Maryland	8
Oklahoma	1
Wyoming	1
Trachoma.	
Illinois	7
Mississippi	14
Ohio	4
Tularaemia:	
Idaho	1
Montana	1
Wyoming	1
Typhus fever:	
Alabama	5
South Carolina	2
Vincent's angina:	
Kansas	2
Maine	5

June, 1927—Continued

Vincent's angina—Continued.	Cases
Maryland	10
Oklahoma	2
Wyoming	1
Whooping cough:	
Alabama	225
Idaho	25
Illinois	1,069
Kansas	389
Maine	129
Maryland	350

June, 1927—Continued

Whooping cough—Continued.	Cases
Mississippi	1,737
Montana	54
North Carolina	2,204
Ohio	576
Oklahoma	68
Oregon	74
South Carolina	661
Washington	146
Wyoming	27

Number of Cases of Certain Communicable Diseases Reported for the Month of May, 1927, by State Health Officers

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Alabama	82	70	953	76	30	101	318	101	221
Arizona	83	5	223	17	54	1	83	8	14
Arkansas [1]									
California	1,602	501	6,642	1,029	719	120	823	47	1,055
Colorado	176	69	1,332	54	689	38	115	40	79
Connecticut	502	103	215	211	390	0	163	2	163
Delaware	10	5	44	11	31	0	10	3	9
District of Columbia	134	79	34		81	9	104	3	48
Florida	96	47	409	32	27	185	122	66	125
Georgia	106	32	492	65	50	93	[2] 53	105	180
Idaho	34	9	248	25	56	52	[2] 10	11	57
Illinois	1,058	466	4,562	2,085	1,043	150	1,157	52	906
Indiana	247	81	687	10	472	443	133	8	195
Iowa	111	84	1,282	146	125	39	66	2	90
Kansas	330	29	3,828	155	267	85	243	12	303
Kentucky [3]									
Louisiana	19	78	255	66	21	20	[2] 197	76	121
Maine	55	27	410	37	146	0	20	4	125
Maryland	382	197	119	134	266	0	[2] 236	25	303
Massachusetts	954	336	1,761	1,610	1,811	0	568	27	474
Michigan	1,175	368	1,177	1,140	1,100	187	506	24	759
Minnesota	735	140	611		758	6	208	13	100
Mississippi	553	27	1,760	600	29	31	280	140	2,054
Missouri	231	166	954	442	339	69	102	57	284
Montana	66	11	71	5	102	23	36	10	26
Nebraska	63	12	1,017	128	111	30	27	4	44
Nevada [4]									
New Hampshire		6			36	0		2	
New Jersey	1,267	488	429		1,374	0	465	12	664
New Mexico [1]									
New York	2,426	2,042	3,889	2,711	3,943	41	1,765	70	1,178
North Carolina	431	52	7,220		68	179		57	2,490
North Dakota	30	12	249	25	140	3	6	2	12
Ohio	1,551	470	870	749	1,279	204	701	48	780
Oklahoma [5]	47	17	1,287	66	101	165	78	89	88
Oregon	107	42	1,298	80	117	72	77	25	72
Pennsylvania	1,921	729	2,962	1,926	2,027	1	1,023	77	813
Rhode Island	59	46	16	27	77	0	[2] 48	1	8
South Carolina	265	67	913	15	28	67	[2] 202	132	661
South Dakota	11	13	342	11	121	16	3	2	35
Tennessee	85	26	352	62	108	68	201	89	316
Texas [1]									
Utah [3]									
Vermont	72	4	594	231	29	0	16	0	79
Virginia	507	83	3,698		121	172	[2] 157	50	1,661
Washington	310	46	1,844	356	175	195	185	14	169
West Virginia	109	44	638		137	110	63	32	216
Wisconsin	913	125	2,954	1,257	589	147	143	13	516
Wyoming	34	5	467	2	90	13	[2] 3	0	12

[1] Reports not received at time of going to press.
[2] Pulmonary.
[3] Reports received weekly.
[4] Reports received annually.
[5] Exclusive of Oklahoma City and Tulsa.

Case Rates per 1,000 Population (Annual Basis) for the Month of May, 1927

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Alabama	0.38	0.32	4.40	0.35	0.14	0.47	1.47	0.47	1.02
Arizona	.85	.13	5.72	.44	1.39	.03	2.13	.21	.36
Arkansas [1]									
California	4.25	1.33	17.64	2.73	1.91	.32	2.19	.12	2.80
Colorado	1.93	.76	14.60	.59	7.55	.42	1.26	.44	.87
Connecticut	3.61	.74	1.55	1.52	2.81	.00	1.17	.01	1.17
Delaware	.48	.24	2.13	.53	1.50	.00	.48	.15	.44
District of Columbia	2.92	1.72	.74		1.77	.20	2.27	.07	1.05
Florida	.83	.41	3.53	.28	.23	1.60	1.05	.57	1.08
Georgia	.39	.12	1.83	.24	.19	.35	[2] .20	.39	.67
Idaho	.75	.20	5.47	.55	1.23	1.15	[2] .22	.24	1.26
Illinois	1.71	.75	7.36	3.37	1.68	.24	1.87	.08	1.46
Indiana	.92	.30	2.57	.04	1.76	1.66	.50	.03	.73
Iowa	.54	.41	6.22	.71	.61	.19	.32	.01	.44
Kansas	2.13	.19	24.66	1.00	1.72	.55	1.57	.06	1.95
Kentucky [3]									
Louisiana	.12	.47	1.55	.40	.18	.12	[2] 1.20	.46	.74
Maine	.82	.40	6.09	.55	2.17	.00	.30	.06	1.86
Maryland	2.82	1.45	.88	.90	1.96	.00	[2] 1.74	.18	2.23
Massachusetts	2.65	.93	4.89	4.47	5.03	.00	1.58	.07	1.32
Michigan	3.08	.96	3.09	2.99	2.88	.49	1.38	.06	1.99
Minnesota	3.22	.61	2.68		3.32	.03	.91	.06	.44
Mississippi	3.64	.18	11.57	3.95	.19	.20	1.84	.92	12.51
Missouri	.77	.56	3.20	1.48	1.14	.23	.34	.19	.95
Montana	1.09	.18	1.17	.06	1.68	.38	.59	.16	.43
Nebraska	.53	.10	8.58	1.08	.94	.25	.23	.03	.37
Nevada [4]									
New Hampshire		.16			.93	.00		.05	
New Jersey	3.98	1.53	1.35		4.32	.00	1.46	.04	2.09
New Mexico [1]									
New York	2.50	2.11	4.01	2.80	4.07	.04	1.82	.07	1.21
North Carolina	1.75	.21	29.34		.28	.73		.23	10.12
North Dakota	.55	.22	4.57	46	2.57	.06	.11	.04	.22
Ohio	2.72	.82	1.53	1.31	2.24	.36	1.23	.08	1.29
Oklahoma [5]	.26	.09	7.13	.37	.56	.91	.43	.49	.40
Oregon	1.42	.56	17.17	1.06	1.55	.95	1.02	.33	.95
Pennsylvania	2.32	.88	3.58	2.33	2.45	.00	1.24	.09	.96
Rhode Island	.99	.77	.27	.45	1.29	.00	[2] .72	.02	.13
South Carolina	1.69	.43	5.83	.10	.18	.43	[2] 1.29	.84	4.22
South Dakota	.19	.22	5.79	.19	2.05	.27	.05	.03	.50
Tennessee	.40	.12	1.67	.29	.51	.32	.95	.42	1.50
Texas [1]									
Utah [3]									
Vermont	2.41	.13	19.84	7.72	.97	.00	.53	.00	2.64
Virginia	2.34	.38	17.10		.56	.80	[2] .73	.23	7.68
Washington	2.34	.35	13.90	2.68	1.32	1.47	1.39	.11	1.27
West Virginia	.76	.31	4.43		.95	.81	.44	.22	1.50
Wisconsin	3.68	.50	11.92	5.07	2.38	.59	.58	.05	2.08
Wyoming	1.66	.24	22.82	.10	4.40	.64	[2] .15	.00	.59

[1] Reports not received at time of going to press.
[2] Pulmonary.
[3] Reports received weekly.
[4] Reports received annually.
[5] Exclusive of Oklahoma City and Tulsa.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 99 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,640,000. The estimated population of the 94 cities reporting deaths is more than 30,000,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended July 16, 1927, and July 17, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
42 States	1,150	907	
99 cities	676	537	563
Measles:			
41 States	2,711	5,289	
99 cities	913	1,315	
Poliomyelitis:			
42 States	106	54	
Scarlet fever:			
42 States	1,442	1,335	
99 cities	486	540	346
Smallpox:			
42 States	398	299	
99 cities	54	41	57
Typhoid fever:			
41 States	866	835	
99 cities	121	127	143
Deaths reported			
Influenza and pneumonia:			
94 cities	349	363	
Smallpox:			
94 cities	0	1	
Omaha	0	1	

City reports for week ended July 16, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics, or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	2	0	0	0	0	0	1	1
New Hampshire.									
Concord	22,546	0	0	0	0	0	1	0	0
Manchester	83,097	0	1	0	0	0	1	0	0
Vermont:									
Barre	10,008	1	0	0	0	0	0	0	0
Burlington	24,089	0	1	0	0	0	1	0	0
Massachusetts:									
Boston	779,620	34	38	31	0	0	87	19	12
Fall River	128,993	2	2	3	0	0	5	0	0
Springfield	142,065	2	1	0	0	0	0	2	2
Worcester	190,757	6	2	0	0	0	0	0	2
Rhode Island:									
Pawtucket	69,760	0	1	1	0	0	0	0	1
Providence	267,918	0	4	6	0	0	1	0	4
Connecticut:									
Bridgeport	(1)	1	4	15	0	1	0	0	1
Hartford	160,197	4	3	1	1	0	0	4	0
New Haven	178,927	6	1	0	0	1	10	0	1

[1] No estimate made.

City reports for week ended July 16, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	11	8	8	-------	0	9	8	5
New York	5,873,356	73	153	237	3	2	43	48	72
Rochester	316,786	2	5	0	-------	0	2	1	5
Syracuse	182,003	13	3	0	-------	0	77	5	0
New Jersey:									
Camden	128,642	1	2	6	0	0	0	0	0
Newark	452,513	37	8	12	0	0	6	19	3
Trenton	132,020	1	2	1	0	0	0	1	0
Pennsylvania:									
Philadelphia	1,979,364	40	44	53	-------	1	29	68	27
Pittsburgh	631,563	22	12	15	-------	1	59	4	10
Reading	112,707	5	1	2	-------	0	22	4	1
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	4	5	2	0	1	6	5	3
Cleveland	936,485	35	16	31	0	0	6	61	14
Columbus	279,836	0	2	5	0	0	0	0	3
Toledo	287,380	24	3	4	0	0	11	1	1
Indiana:									
Fort Wayne	97,846	1	1	1	0	0	0	0	0
Indianapolis	358,819	2	3	4	0	0	1	13	4
South Bend	80,091	0	1	0	0	0	2	0	0
Terre Haute	71,071	0	0	0	0	0	2	0	0
Illinois:									
Chicago	2,995,239	44	58	52	1	0	41	50	26
Springfield	63,923	2	0	1	0	0	2	1	0
Michigan:									
Detroit	1,245,824	20	33	25	0	0	6	20	11
Flint	130,316	6	2	5	0	0	8	1	3
Grand Rapids	153,698	1	2	0	0	0	13	0	2
Wisconsin:									
Kenosha	50,891	2	1	0	0	0	1	7	0
Madison	46,385	13	0	2	0	0	0	1	0
Milwaukee	509,192	24	10	9	1	1	76	26	2
Racine	67,707	3	1	4	0	0	1	2	0
Superior	39,671	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	6	0	0	0	0	4	0	0
Minneapolis	425,435	65	10	8	0	0	5	0	4
St. Paul	246,001	10	9	0	0	0	12	0	0
Iowa:									
Davenport	52,469	0	1	0	0	-------	0	0	-------
Des Moines	141,441	0	2	0	0	-------	0	0	-------
Sioux City	76,411	0	1	0	0	-------	1	0	-------
Waterloo	36,771	0	0	0	0	-------	1	0	-------
Missouri:									
Kansas City	367,481	1	2	4	0	1	8	0	5
St. Joseph	78,342	0	0	0	0	0	1	0	1
St. Louis	821,543	3	20	11	0	0	12	43	-------
North Dakota:									
Fargo	26,403	0	0	0	0	0	0	0	0
Grand Forks	14,811	0	0	0	0	-------	0	0	-------
South Dakota:									
Aberdeen	15,036	0	0	0	0	-------	0	0	-------
Sioux Falls	30,127	0	0	0	0	-------	4	0	-------
Nebraska:									
Lincoln	60,941	3	0	2	0	1	3	6	0
Omaha	211,768	0	4	3	0	0	2	2	3
Kansas:									
Topeka	55,411	1	0	1	0	0	6	0	1
Wichita	88,367	0	1	0	0	0	1	3	1
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	0	0	0	0	0	0	0	0

City reports for week ended July 16, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
SOUTH ATLANTIC—con.									
Maryland:									
Baltimore	796,296	30	11	30	1	1	10	3	9
Cumberland	33,741	1	0	0	0	0	0	0	0
Frederick	12,035	1	0	0	0	0	0	0	0
District of Columbia:									
Washington	497,906	4	4	7	1	1	2	0	5
Virginia:									
Lynchburg	30,395	0	0	1	0	0	1	0	0
Norfolk	(1)	0	0	0	6	0	2	4	3
Richmond	186,403	1	1	2	0	1	9	2	5
Roanoke	58,208	1	0	0	0	0	0	0	0
West Virginia:									
Charleston	49,019	1	0	0	0	0	3	0	1
Wheeling	56,208	0	0	0	0	0	0	0	2
North Carolina:									
Raleigh	30,371	0	0	0	0	0	15	0	0
Wilmington	37,061	0	0	0	0	0	9	0	0
Winston-Salem	69,031	0	0	1	0	0	42	3	1
South Carolina:									
Charleston	73,125	0	0	0	7	0	0	1	1
Columbia	41,225	1	0	0	0		11	1	
Greenville	27,311	0	0	0	0	0	0	0	0
Georgia:									
Atlanta	(1)	0	2	0	4	0	4	4	5
Brunswick	16,809	0	0	0	0	0	0	6	0
Savannah	93,134	2	0	3	4	0	13	1	0
Florida:									
Miami	69,754	0		1	0	0	0	0	1
St. Petersburg	26,847		0			0			1
Tampa	94,743	0	0	2	0	0	1	0	2
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	1	0	0	0	0	0	1
Louisville	305,935	1	2	2	0	0	0	0	4
Tennessee:									
Memphis	174,533	6	1	2	0	0	4	0	2
Nashville	136,220	0	0	1	0	0	0	0	1
Alabama:									
Birmingham	205,670	0	1	2	0	1	2	0	3
Mobile	65,955	0	0	0	0	0	0	0	2
Montgomery	46,481	0	0	0	0	0	6	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643		0						
Little Rock	74,216	0	0	0	0	0	6	0	0
Louisiana:									
New Orleans	414,493	0	4	8	5	2	13	0	7
Shreveport	57,857	1	0	0	0	0	2	0	4
Oklahoma:									
Oklahoma City	(1)	0	0	0	2	0	3	0	1
Tulsa	124,478	0		0	0		0	0	
Texas:									
Dallas	194,450	0	2	2	0		3	0	
Galveston	48,375	0	0	1	0	0	0	0	0
Houston	164,954	0	1	6	0	0	0	0	0
San Antonio	198,069	0	1	0	0	0	1	0	4
MOUNTAIN									
Montana:									
Billings	17,971	0	0	0	0	0	0	0	1
Great Falls	29,883	2	0	0	0	0	4	0	0
Helena	12,037	1	0	0	0	0	0	0	0
Missoula	12,668	0	0	1	0	0	1	0	1
Idaho:									
Boise	23,042	1	0	0	0	0	0	1	0
Colorado:									
Denver	280,911		8			1			
Pueblo	43,787	1	1	0	0	0	6	0	0

[1] No estimate made.

City reports for week ended July 16, 1927—Continued

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
MOUNTAIN—continued									
New Mexico									
Albuquerque	21,000	0	1	0	0	0	3	0	1
Utah									
Salt Lake City	130,948	18	2	5	0	0	3	0	2
Nevada									
Reno	12,665	0	0	0	0	0	0	0	1
PACIFIC									
Washington									
Seattle	(1)	5	4	8	0	-------	125	7	-------
Spokane	108,897	10	1	0	0	-------	3	0	-------
Tacoma	104,455	2	2	1	0	1	16	0	0
California									
Los Angeles	(1)	16	33	24	5	1	15	4	15
Sacramento	72,260	0	2	1	0	0	0	0	2
San Francisco	557,530	13	11	9	2	0	12	10	11

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine											
Portland	0	0	0	0	0	0	1	2	0	2	20
New Hampshire											
Concord	0	0	0	0	0	0	0	0	0	0	7
Manchester	0	0	0	0	0	0	0	0	0	0	13
Vermont											
Barre	0	0	0	0	0	0	0	0	0	0	2
Burlington	0	0	0	0	0	0	0	0	0	0	12
Massachusetts											
Boston	21	40	0	0	0	7	2	0	0	16	161
Fall River	1	2	0	0	0	3	1	2	1	0	30
Springfield	2	2	0	0	0	1	0	0	0	9	32
Worcester	3	4	0	0	0	2	0	3	0	4	40
Rhode Island											
Pawtucket	0	2	0	0	0	0	0	0	0	0	19
Providence	3	4	0	0	0	6	0	0	0	0	61
Connecticut											
Bridgeport	3	1	1	0	0	3	0	1	0	0	25
Hartford	2	1	0	0	0	0	0	0	0	6	43
New Haven	1	0	0	0	0	0	1	0	0	4	36
MIDDLE ATLANTIC											
New York											
Buffalo	9	8	0	0	0	15	1	0	0	15	128
New York	53	103	1	0	0	[2] 109	22	17	0	106	1,222
Rochester	4	2	0	0	0	1	1	0	0	12	57
Syracuse	3	4	0	0	0	1	1	0	0	1	43
New Jersey											
Camden	1	0	0	0	0	0	0	1	0	1	47
Newark	7	8	0	0	0	9	1	0	0	41	92
Trenton	0	0	0	0	0	1	0	2	0	1	27
Pennsylvania											
Philadelphia	30	48	0	0	0	36	7	2	2	39	415
Pittsburgh	12	11	1	0	0	9	2	0	0	15	174
Reading	0	0	0	0	0	0	0	0	0	2	17

[1] No estimate made.

[2] Pulmonary tuberculosis only.

City reports for week ended July 16, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths all causes
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	5	7	0	6	0	12	2	0	0	3	113
Cleveland	14	13	2	0	0	18	2	4	0	43	196
Columbus	3	5	1	1	0	6	1	0	0	16	70
Toledo	4	2	0	0	0	3	0	4	0	18	61
Indiana:											
Fort Wayne	0	2	1	1	0	1	0	0	0	7	19
Indianapolis	3	2	2	5	0	5	1	1	0	9	94
South Bend	0	0	0	0	0	0	1	1	0	1	--------
Terre Haute	0	0	0	0	0	1	0	0	0	0	16
Illinois:											
Chicago	34	42	1	6	0	63	5	5	1	109	648
Springfield	1	0	0	0	0	0	1	0	0	1	24
Michigan:											
Detroit	29	28	3	1	0	27	4	0	0	107	243
Flint	2	13	0	4	0	1	0	0	0	8	26
Grand Rapids	3	7	0	2	0	1	0	1	0	1	31
Wisconsin:											
Kenosha	1	2	1	0	0	0	0	0	0	0	3
Madison	0	4	0	1	0	1	0	0	0	6	16
Milwaukee	10	8	1	0	0	1	1	0	0	18	95
Racine	2	2	1	0	0	1	0	0	0	10	7
Superior	1	3	2	0	0	0	0	0	0	0	7
WEST NORTH CENTRAL											
Minnesota:											
Duluth	3	7	1	0	0	1	0	0	1	3	21
Minneapolis	12	9	3	0	0	2	1	1	0	3	67
St. Paul	7	8	2	0	0	0	1	0	0	17	--------
Iowa:											
Davenport	0	0	0	0	--------	--------	0	0	--------	0	--------
Des Moines	1	2	1	2	--------	1	0	0	--------	0	8
Sioux City	1	1	1	1	--------	--------	0	1	--------	1	--------
Waterloo	1	0	0	0	--------	--------	0	0	--------	0	--------
Missouri:											
Kansas City	2	3	1	0	0	5	2	2	0	7	76
St. Joseph	0	2	0	3	0	1	0	0	0	1	23
St. Louis	7	5	0	1	0	6	6	4	0	50	184
North Dakota:											
Fargo	1	0	0	0	0	1	0	0	0	0	11
Grand Forks	1	1	0	0	--------	--------	0	0	--------	0	--------
South Dakota:											
Aberdeen	0	1	0	0	--------	--------	0	0	--------	4	--------
Sioux Falls	0	0	0	0	--------	--------	0	0	--------	0	--------
Nebraska:											
Lincoln	0	1	1	0	0	0	0	1	0	11	16
Omaha	1	5	3	0	0	1	1	0	0	1	43
Kansas:											
Topeka	1	1	0	0	0	1	1	0	0	26	17
Wichita	0	0	1	2	0	1	1	0	0	14	33
SOUTH ATLANTIC											
Delaware:											
Wilmington	1	1	0	0	0	2	1	0	0	0	23
Maryland:											
Baltimore	7	10	0	0	0	12	6	3	0	49	197
Cumberland	1	0	0	0	0	0	0	0	0	0	9
Frederick	0	2	0	0	0	0	0	0	0	0	2
District of Columbia:											
Washington	5	5	0	1	0	10	3	2	0	5	138
Virginia:											
Lynchburg	0	1	0	0	0	0	0	0	0	1	8
Norfolk	0	5	1	0	0	2	2	1	0	0	--------
Richmond	1	1	0	0	0	4	2	1	0	1	57
Roanoke	0	0	0	1	0	1	1	1	0	2	10
West Virginia:											
Charleston	0	0	1	0	0	1	1	3	0	8	10
Wheeling	1	0	0	0	0	0	0	0	0	0	10
North Carolina:											
Raleigh	0	1	0	0	0	3	1	0	0	4	12
Wilmington	0	0	0	0	0	0	1	0	0	4	7
Winston-Salem	0	0	1	0	0	2	3	1	0	24	21

City reports for week ended July 16, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
SOUTH ATLANTIC—continued											
South Carolina:											
Charleston	0	1	0	0	0	4	2	3	0	0	28
Columbia	0	0	0	0	-------	1	1	0	-------	2	14
Greenville	0	0	0	0	0	0	1	0	0	2	4
Georgia:											
Atlanta	1	0	3	2	0	3	3	7	1	6	73
Brunswick	0	0	0	0	0	0	1	0	0	0	3
Savannah	0	4	0	1	0	4	1	1	0	3	26
Florida:											
Miami	0	1	0	0	0	0	-------	1	0	3	31
St. Petersburg	0	-------	0	1	0	0	0	-------	0	-------	16
Tampa	0	0	0	0	0	0	0	1	0	0	24
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0	0	0	0	0	2	0	0	0	0	17
Louisville	2	2	0	1	0	3	5	3	0	5	72
Tennessee:											
Memphis	0	2	1	1	0	10	6	8	0	10	72
Nashville	0	2	1	0	0	4	6	14	2	3	39
Alabama:											
Birmingham	1	0	1	3	0	5	4	4	0	9	71
Mobile	0	0	1	0	0	0	0	1	1	0	18
Montgomery	0	0	1	0	0	0	1	0	0	0	-------
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	-------	0	-------	-------	-------	2	-------	-------	-------	-------
Little Rock	0	0	1	0	0	0	2	0	0	0	-------
Louisiana:											
New Orleans	1	3	0	0	0	12	4	4	1	5	163
Shreveport	0	0	1	0	0	3	0	0	0	7	30
Oklahoma:											
Oklahoma City	1	2	1	0	0	1	2	0	0	0	19
Tulsa	-------	1	-------	0	-------	-------	-------	0	-------	0	-------
Texas:											
Dallas	1	2	0	1	-------	-------	3	6	-------	0	-------
Galveston	0	0	0	0	0	1	1	0	0	0	14
Houston	1	2	0	1	0	4	2	1	1	0	51
San Antonio	0	2	0	0	0	5	1	1	0	0	52
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	0	0	0	0	7	6
Great Falls	0	4	0	1	0	0	0	0	0	0	7
Helena	0	0	0	1	0	1	0	0	0	0	5
Missoula	0	0	0	0	0	0	0	1	0	2	6
Idaho:											
Boise	1	0	1	0	0	0	0	0	0	0	6
Colorado:											
Denver	6	-------	2	-------	0	9	1	-------	0	-------	68
Pueblo	0	3	0	0	0	1	0	0	0	0	10
New Mexico:											
Albuquerque	0	1	0	0	0	2	0	1	0	0	-------
Utah:											
Salt Lake City	1	4	0	2	0	1	0	1	0	28	16
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	4
PACIFIC											
Washington:											
Seattle	5	2	3	1	-------	-------	1	0	-------	14	-------
Spokane	1	3	3	1	-------	-------	1	0	-------	0	-------
Tacoma	1	0	2	1	0	1	0	0	0	0	15
California:											
Los Angeles	9	10	4	0	0	25	4	1	0	11	239
Sacramento	1	0	0	2	0	5	0	2	0	5	25
San Francisco	5	4	1	0	0	12	1	0	0	14	124

City reports for week ended July 16, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Massachusetts									
Boston	1	2	0	0	0	0	0	1	0
Springfield	0	0	0	0	0	0	0	1	0
Worcester	0	0	1	1	0	0	0	0	0
Connecticut.									
Bridgeport	0	0	0	0	0	0	0	1	0
Hartford	1	0	0	0	0	0	0	0	0
New Haven	0	0	0	0	0	0	0	1	0
MIDDLE ATLANTIC									
New York									
New York	1	2	4	5	0	0	3	8	0
Pennsylvania									
Philadelphia	2	1	0	0	1	1	0	0	1
Pittsburgh	0	0	1	1	0	0	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Cleveland	0	1	0	0	0	0	0	0	0
Columbus	0	0	0	2	0	0	0	0	0
Illinois									
Chicago	5	5	1	0	0	0	1	5	1
Michigan:									
Detroit	2	0	1	0	0	0	1	1	0
Wisconsin.									
Milwaukee	0	0	1	1	0	0	0	0	0
WEST NORTH CENTRAL									
Iowa:									
Waterloo	1		0		0		0	0	
Missouri:									
Kansas City	0	0	0	0	0	0	0	2	0
St. Louis	1	1	0	0	0	0	1	1	0
SOUTH ATLANTIC									
Maryland.									
Baltimore	2	2	1	1	0	0	1	0	0
Virginia:									
Richmond	0	0	0	0	0	1	0	0	0
North Carolina:									
Winston-Salem	0	0	0	0	2	0	0	0	0
South Carolina:									
Charleston [1]	0	0	0	0	1	3	0	0	0
Columbia	0	0	0	0	0	3	0	0	0
Georgia									
Atlanta	0	0	0	0	0	2	0	0	0
Savannah	0	0	0	0	4	0	0	0	0
EAST SOUTH CENTRAL									
Kentucky.									
Covington	0	1	0	0	0	0	0	0	0
Tennessee:									
Memphis [2]	0	0	0	0	0	1	0	0	0
Alabama:									
Mobile	0	0	0	0	0	1	0	0	0
Montgomery	0	0	0	0	1	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	1	0	0	0
Louisiana:									
New Orleans	0	0	1	1	2	0	0	4	1
Shreveport	0	0	0	0	0	2	0	0	0

[1] Dengue: 13 cases at Charleston, S. C.
[2] Rabies (human): 1 case and 1 death at Memphis, Tenn.

City reports for week ended July 16, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
WEST SOUTH CENTRAL—continued									
Oklahoma:									
Oklahoma City	0	0	0	0	0	0	0	1	0
Texas.									
Galveston	0	0	0	0	0	1	0	0	0
Houston	1	1	0	0	2	2	0	0	0
MOUNTAIN									
Montana:									
Billings	0	1	0	0	0	0	0	0	0
New Mexico:									
Albuquerque	0	0	0	0	0	0	0	1	0
Utah:									
Salt Lake City	0	0	0	0	0	0	0	1	0
PACIFIC									
Washington:									
Seattle	0		0		0		0	1	
California:									
Los Angeles	1	2	0	0	0	1	1	7	0
Sacramento	0	1	0	0	0	0	0	0	0
San Francisco	1	0	0	0	0	0	0	3	0

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended July 16, 1927, compared with those for a like period ended July 17, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, June 12 to July 16, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927
101 cities	113	151	130	162	[2] 122	140	102	[3] 123	94	[4] 115
New England	78	118	59	116	64	88	57	[5] 92	78	132
Middle Atlantic	125	217	152	270	164	212	120	197	101	165
East North Central	131	142	162	132	117	119	106	102	110	93
West North Central	169	79	192	46	125	60	93	[6] 39	107	54
South Atlantic	67	118	45	107	82	143	65	[7] 86	32	83
East South Central	16	41	10	36	[2] 22	20	5	41	21	36
West South Central	43	55	43	67	47	122	43	[8] 52	26	[8] 73
Mountain	146	207	118	153	155	126	118	108	109	[9] 108
Pacific	102	115	131	113	129	76	179	86	158	113

MEASLES CASE RATES

	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927
101 cities	749	361	619	302	[2] 461	272	311	[3] 196	226	[4] 155
New England	493	406	425	327	318	341	245	[5] 322	179	241
Middle Atlantic	586	281	477	247	314	201	211	154	129	122
East North Central	1,003	261	838	214	739	206	481	182	412	110
West North Central	1,264	248	942	216	605	204	417	[6] 88	192	105
South Atlantic	818	694	695	531	432	447	291	[7] 249	201	221
East South Central	693	132	610	132	[2] 428	82	284	76	171	61
West South Central	77	268	95	130	52	151	47	[8] 116	17	[8] 108
Mountain	702	342	793	450	437	494	264	135	191	[9] 251
Pacific	597	971	482	843	458	775	335	539	327	448

SCARLET FEVER CASE RATES

	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927
101 cities	233	198	212	190	[2] 170	128	127	[3] 100	94	[4] 88
New England	203	265	236	237	186	221	158	[5] 182	99	130
Middle Atlantic	222	224	210	223	188	149	129	123	73	91
East North Central	273	216	251	209	187	132	145	91	119	89
West North Central	484	163	357	159	270	80	206	[6] 94	186	71
South Atlantic	180	82	151	96	65	82	63	[7] 56	45	56
East South Central	47	71	47	82	[2] 66	56	52	46	52	31
West South Central	69	8	30	38	60	17	34	[8] 43	52	[8] 39
Mountain	128	665	118	441	91	288	55	117	91	[9] 197
Pacific	214	181	158	139	150	86	121	60	94	50

SMALLPOX CASE RATES

	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927
101 cities	11	19	16	16	[2] 11	18	7	[3] 16	7	[4] 9
New England	0	0	0	0	0	0	0	[5] 0	0	0
Middle Atlantic	0	0	0	0	2	0	0	0	1	0
East North Central	10	21	14	12	10	21	7	15	6	17
West North Central	32	30	44	58	26	38	28	[6] 33	26	14
South Atlantic	30	36	26	29	11	18	9	[7] 24	6	9
East South Central	10	56	88	56	[2] 38	36	0	51	5	25
West South Central	26	13	17	13	21	13	4	[8] 0	13	[8] 9
Mountain	27	54	18	90	55	63	9	45	9	[9] 72
Pacific	24	65	32	21	19	73	24	73	21	13

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.
[2] Covington, Ky., not included.
[3] Bridgeport, Conn., Sioux City, Iowa, Savannah, Ga., and Fort Smith, Ark., not included.
[4] Fort Smith, Ark., and Denver, Colo., not included.
[5] Bridgeport, Conn., not included.
[6] Sioux City, Iowa, not included.
[7] Savannah, Ga., not included.
[8] Fort Smith, Ark., not included.
[9] Denver, Colo., not included.

Summary of weekly reports from cities, June 12 to July 16, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927
101 cities	11	13	12	11	[2] 16	15	13	[3] 17	22	[4] 21
New England	19	12	9	2	12	7	9	[5] 15	12	19
Middle Atlantic	9	6	10	4	11	6	7	8	11	11
East North Central	3	8	4	6	5	5	5	5	6	8
West North Central	10	6	4	6	10	8	16	[6] 10	14	16
South Atlantic	28	27	30	40	35	22	43	[7] 36	58	43
East South Central	21	82	36	61	[2] 126	132	52	163	165	153
West South Central	30	38	30	21	13	75	30	[8] 17	56	[8] 52
Mountain	0	18	0	18	27	9	0	18	0	[9] 36
Pacific	8	8	16	8	21	16	13	10	21	8

INFLUENZA DEATH RATES

	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927
95 cities	7	6	5	7	[2] 6	3	4	[10] 3	4	[11] 3
New England	9	2	0	5	5	5	7	[5] 2	0	5
Middle Atlantic	9	5	6	6	7	2	1	4	4	2
East North Central	3	5	3	5	5	3	7	3	4	1
West North Central	4	2	6	10	8	2	0	0	0	2
South Atlantic	4	9	6	2	8	6	0	[7] 4	6	6
East South Central	16	5	5	25	[2] 0	0	16	15	21	5
West South Central	22	17	22	4	13	4	4	[12] 0	9	[11] 10
Mountain	0	9	0	27	9	9	0	0	9	18
Pacific	4	0	0	10	4	3	4	3	4	7

PNEUMONIA DEATH RATES

	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927
95 cities	87	87	73	74	[2] 75	73	67	[10] 60	60	[11] 57
New England	87	107	68	86	92	60	54	[5] 60	57	56
Middle Atlantic	95	95	83	85	90	71	73	64	74	61
East North Central	74	86	60	71	61	80	65	49	46	45
West North Central	74	48	44	52	38	77	53	54	36	31
South Atlantic	112	61	95	46	89	57	72	[7] 59	55	63
East South Central	98	71	124	56	[2] 121	97	119	82	109	66
West South Central	66	95	71	43	53	73	53	[12] 99	79	[11] 78
Mountain	100	153	109	54	46	90	36	99	36	197
Pacific	74	100	42	131	42	69	53	55	46	97

[2] Covington, Ky., not included.
[3] Bridgeport, Conn., Sioux City, Iowa, Savannah, Ga., and Fort Smith, Ark., not included.
[4] Fort Smith, Ark., and Denver, Colo., not included.
[5] Bridgeport, Conn., not included.
[6] Sioux City, Iowa, not included.
[7] Savannah, Ga., not included.
[8] Fort Smith, Ark., not included.
[9] Denver, Colo., not included.
[10] Bridgeport, Conn., Savannah, Ga., Dallas, Tex., and San Antonio, Tex., not included.
[11] Dallas, Tex., not included.
[12] Dallas, Tex., and San Antonio, Tex., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30, 443, 800	30, 966, 700	29, 783, 700	30, 295, 900
New England	12	12	2, 211, 000	2, 245, 900	2, 211, 000	2, 245, 900
Middle Atlantic	10	10	10, 457, 000	10, 567, 000	10, 457, 000	10, 567, 000
East North Central	16	16	7, 650, 200	7, 810, 600	7, 650, 200	7, 810, 600
West North Central	12	10	2, 585, 500	2, 626, 600	2, 470, 600	2, 510, 000
South Atlantic	21	20	2, 799, 500	2, 878, 100	2, 757, 700	2, 835, 700
East South Central	7	7	1, 008, 300	1, 023, 500	1, 008, 300	1, 023, 500
West South Central	8	7	1, 213, 800	1, 243, 300	1, 181, 500	1, 210, 400
Mountain	9	9	572, 100	580, 000	572, 100	580, 000
Pacific	6	4	1, 946, 400	1, 991, 700	1, 475, 300	1, 512, 800

FOREIGN AND INSULAR

THE FAR EAST

Report for week ended July 9, 1927.—The following report for the week ended July 9, 1927, was transmitted by the eastern bureau of the health section of the secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva.

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Iraq: Basra	0	0	0	0	1	1
Ceylon: Colombo	0	0	0	0	1	0
British India:						
Bombay	....	5	....	2	21	17
Vizagapatam	....	0	....	0	2	1
Calcutta	....	0	....	12	11	10
Bassein	....	5	....	13	0	0
Rangoon	....	3	....	1	12	1
Siam: Bangkok	0	0	1	0	3	0
French Indo-China:						
Saigon and Cholon	0	0	1	1	0	0
Tourane	0	0	2	1	0	0
Haiphong	0	0	7	7	0	0
Hong Kong	0	0	0	0	1	1
China: Canton	0	0	1	1	0	0
Manchuria:						
Mukden	0	0	0	0	1	0
Changchun	0	0	0	0	1	0
Japan: Nagasaki	0	0	0	0	17	4

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Arabia.—Jeddah, Aden, Perim.

Persia.—Mohammerah, Bender-Abbas, Bushire, Lingah.

British India.—Karachi, Chittagong, Cochin, Tuticorin, Negapatam, Madras, Moulmein.

Portuguese India.—Nova Goa.

Federated Malay States.—Port Swettenham.

Straits Settlements.—Singapore, Penang.

Dutch East Indies.—Batavia, Banjermasin, Pontianak, Semarang, Menado, Cheribon, Makassar, Balikpapan, Padang, Palembang, Surabaya, Belawan-Deli, Tarakan, Sabang.

Sarawak.—Kuching.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

Portuguese Timor.—Dilly.

Philippine Islands.—Manila, Iloilo, Jolo, Cebu, Zamboanga.

China.—Amoy, Shanghai, Tientsin, Tsingtao.

Macao.

Formosa.—Keelung, Takao.

Chosen.—Chemulpo, Fusan.

Manchuria.—Yingkow, Antung, Harbin.

Kwantung.—Port Arthur, Dairen.

Japan.—Yokohama, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns.

AUSTRALASIA AND OCEANIA—continued

New Guinea.—Port Moresby.

New Britain Mandated Territory.—Rabaul and Kokopo.

New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.

Samoa.—Apia.

New Caledonia.—Noumea.

Fiji.—Suva.

Hawaii.—Honolulu.

Society Islands.—Papeete.

AFRICA

Egypt.—Port Said, Alexandria, Suez.

Anglo-Egyptian Sudan.—Port Sudan, Suakin.

Eritrea.—Massaua.

French Somaliland.—Djibouti.

British Somaliland.—Berbera.

Italian Somaliland.—Mogadiscio.

Zanzibar.—Zanzibar.

Kenya.—Mombasa.

Tanganyika.—Dar-es-Salaam.

Seychelles.—Victoria.

Portuguese East Africa.—Mozambique, Beira, Lourenço-Marques.

Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.

Reunion.—Saint Denis.

Mauritius.—Port Louis.

Madagascar.—Majunga, Tamatave, Diego-Suarez.

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from—

Arabia.—Kamaran.
Dutch East Indies.—Samarinda.
U. S. S. R.—Vladivostok.

Related information:

Week ended June 25: *Karikal*, 2 fatal cholera cases.
Week ended July 2. *Karikal*, 6 chlolera cases and 5 deaths.

Movement of infected ships:

Penang.—The pilgrim ships *Antilochus* and *Adrastus* arrived from Jeddah infected with smallpox.

The following information has been received by cable from the Sanitary, Maritime and Quarantine Council of Egypt:

Pilgrims are beginning to arrive at El Tor from Medina via Yambo. The reports of health conditions at Medina are satisfactory. The last weekly bulletin from Jeddah and Mecca reports 11 cases of smallpox. The number of pilgrims who arrived at El Tor during the week ending July 13 was 2,697. No cases of infectious diseases were reported.

ANGOLA

Influenza—Malaria—April, 1927.—During the month of April, 1927, influenza was reported present in Angola, West Africa, with 1,302 reported cases, of which 880 cases were reported from the coast districts, 136 from the land frontier districts, and 286 from the interior, occurring in the districts of Cuanza-Norte, Malanje, and Bié.

Malaria.—During the same period 562 cases of malaria were reported in Angola, the occurrence being distributed as follows: Coast districts, 306 cases; land frontier, 172; the three interior provinces of Cuanza-Norte, Malanje, and Bié, 84. At the city of Loanda, during the last two weeks of April, 1927, 77 cases were reported in a population of 20,000.

May 1–15, 1927.—During the first half of May, 1927, continued prevalence of malaria was reported in Angola, with diminished prevalence at Loanda and other seaports, but with extension in interior districts. Many cases were reported throughout the colony.

CANADA

Communicable diseases—Week ended July 16, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases from six Provinces of Canada for the week ended July 16, 1927 as follows:

Disease	Nova Scotia	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Influenza	6						6
Lethargic encephalitis				1			1
Smallpox			12	4	7	13	36
Typhoid fever		47	12				59

Communicable diseases—Quebec—Two weeks ended July 23, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the two weeks ended July 23, 1927, as follows:

WEEK ENDED JULY 16, 1927

Disease	Cases	Disease	Cases
Chicken pox	20	Scarlet fever	43
Diphtheria	34	Smallpox	2
German measles	3	Tuberculosis	47
Influenza	2	Typhoid fever	47
Measles	43	Whooping cough	60

WEEK ENDED JULY 23, 1927

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	1	Scarlet fever	27
Chicken pox	12	Smallpox	4
Diphtheria	32	Tuberculosis	19
German measles	2	Typhoid fever	30
Measles	21	Whooping cough	16

Typhoid fever—Montreal—January 2–July 23, 1927.—The following table gives the number of cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	Apr. 23, 1927	125	43
Jan. 15, 1927	4	3	Apr 30 1927	105	23
Jan. 22 1927	1	2	May 7, 1927	106	19
Jan. 29, 1927	3	1	May 14, 1927	367	16
Feb. 5, 1927	1	0	May 21, 1927	770	26
Feb. 12, 1927	0	0	May 28, 1927	353	38
Feb. 19, 1927	1	2	June 4, 1927	289	37
Feb. 26, 1927	1	1	June 11. 1927	128	30
Mar. 5, 1927	9	1	June 18, 1927	86	
Mar. 12, 1927	203	4	June 25, 1927	75	23
Mar. 19, 1927	383	14	July 2, 1927	66	21
Mar. 26, 1927	506	22	July 9, 1927	52	10
Apr. 2, 1927	649	48	July 16, 1927	39	4
Apr. 9, 1927	386	40	July 23, 1927	22	0
Apr. 16, 1927	175	38			

CUBA

Communicable diseases—Provinces—April 17–June 18, 1927.—Cases of disease were notified in the Provinces of Cuba for nine weeks ending June 18, 1927, as follows:

Disease	Pinar del Rio	Habana	Matanzas	Santa Clara	Camaguay	Oriente	Total
Cerebrospinal meningitis						1	1
Chicken pox		94	13	23	24	85	239
Diphtheria	3	22	8	3	5	5	46
Malaria	17	94	3	3	81	1,210	1,408
Measles	17	122	25	51	8	1	224
Scarlet fever		10	5				15
Paratyphoid fever	4	19	7	10	15	8	63
Tetanus	1					1	2
Typhoid fever	31	179	29	86	19	69	413

EGYPT

Communicable diseases—May 28–June 17, 1927.—During the period May 28 to June 17, 1927, communicable diseases were reported in Egypt as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Influenza	112		Typhoid fever	143	
Smallpox	5	1	Typhus fever	79	16

Plague—June 18–24, 1927.—During the week ended June 24, 1927, two cases of plague, occurring in the city of Port Said, were reported in Egypt.

Summary—January 1–June 24, 1927.—During the period January 1 to June 24, 1927, 44 cases of plague were reported in Egypt, as compared with 30 cases reported during the corresponding period of the preceding year.

IRISH FREE STATE

Typhus fever—Cork—July 3–9, 1927.—During the week ended July 9, 1927, a case of typhus fever was reported in the urban district of Cork County Borough, Irish Free State.

MADAGASCAR

Plague—April 16–30, 1927.[1]—During the two weeks ended April 30, 1927, 72 cases of plague with 67 deaths were reported in Madagascar. The occurrence was distributed in the five Provinces of the island as follows: Ambositra—cases and deaths, each, 25; Antisirabe—2 cases, 2 deaths; Miarinarivo (Itasy)—cases and deaths, 7; Moramanga—cases and deaths, 4; Tananarive—cases 34, deaths 29. The distribution of occurrence according to type was as follows: Bubonic, 40; pneumonic, 15; septicemic, 17. Mortality for the several types of the disease was—bubonic, 35 deaths; pneumonic, 15; septicemic, 17.

SENEGAL

Plague.—Under date of July 6, 1927, 8 cases of plague with 6 deaths, occurring during the week ended July 3, 1927, were reported at Dakar. At Rufisque 15 cases with 8 deaths were reported, occurring in suburbs, and in districts occurrence was reported as follows: Facel—17 cases, 8 deaths; M'Bour—28 cases, 21 deaths; Thies—1 case, 1 death. At Tivaouane 5 cases with 2 deaths were reported.

Yellow fever.—Under date of July 6, 1927, one case of yellow fever with one death was reported at M'Bour, occurring in a Syrian.

[1] Public Health Reports, July 22, 1927, p. 1933.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the lists of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended August 5, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Kulangsu	June 21	1		
Shanghai	June 19-25	2		In International Settlement.
Swatow	June 12-18	7		Prevalent.
India				May 29-June 4, 1927: Cases, 7,787; deaths, 5,573.
Calcutta	June 12-18	77	43	
Madras	June 19-25	5	3	
Rangoon	June 12-18	1		May 29-June 4, 1927: One case, one death. Out of date.
Siam				June 5-11, 1927: Cases, 17; deaths, 14. Apr. 1-June 11, 1927: Cases, 498; deaths, 342.
Bangkok	June 5-11	3	2	District.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Ceylon:				
Colombo	June 5-11	2	1	
Egypt				June 18-24, 1927: Cases, 2. Jan. 1-June 24, 1927: Cases, 44; corresponding period, 1926-cases, 30.
Port Said	June 18-24	2		
India				May 29-June, 4, 1927: Cases, 237; deaths, 149.
Bombay	June 19-25	6	5	
Madras Presidency	May 29-June 4	36	13	
Rangoon	June 12-18	1	1	
Madagascar				Apr. 16-30, 1927: Cases, 72; deaths, 67.
Province—				
Ambositra	Apr. 16-30	25	25	Bubonic.
Antsirabe	do	2	2	Pneumonic; septicemic.
Miarinarivo	do	7	7	Bubonic and septicemic, each, 3; pneumonic, 1.
Moramanga	do	4	4	Bubonic.
Tananarive	do	34	29	Bubonic, 17; pneumonic, 13; septicemic, 4. Including Tananarive Town: bubonic, 1; pneumonic, 2
Senegal:				
Dakar	June 27-July 3	8	6	
Facel	July 6	17	8	District.
M'Bour	do	28	21	Do.
Rufisque	do	15	8	In suburbs.
Thies	do	1	1	District.
Tivaouane	do	5	1	
Siam				June 5-11, 1927: Cases, 1. Apr. 1-June 11, 1927; cases, 9; deaths, 7.
Bangkok	June 5-11	1		District.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	June 21-30	1		
Oran	July 1-10	8		
Brazil:				
Rio de Janeiro	June 12-18	1	1	
British South Africa:				
Northern Rhodesia	June 11-17	2		Natives.
Canada:				
Alberta	July 10-16	7		
Manitoba	do	4		
Ontario	do	12		
Toronto	July 17-23	1		
Quebec	July 10-23	6		
Saskatchewan	July 10-16	13		

[1] From medical officers of the Public Health Service, American consuls and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended August 5, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
China:				
Foochow	June 5-11			Present.
Hong Kong	June 12-18	1	1	
Manchuria—				
Dairen	May 9-22	3	1	
Harbin	June 13-19	1		
South Manchurian Ry.:				
Changchun	June 19-25	1		
Mukden	June 12-25	2		
Ssupingkai	June 12-18	1		
Egypt				May 28-June 17, 1927: Cases, 5; deaths, 1.
Cairo	Feb. 5-11	1		
Great Britain	June 19-July 9	672		
Sheffield	June 26-July 9	6		
India				May 29-June 4, 1927: Cases, 5,984; deaths, 1,396.
Bombay	June 19-25	37	24	
Calcutta	June 12-18	32	24	
Karachi	June 19-25	1		Imported.
Madras	do	1	1	
Rangoon	May 29-June 4	23	7	Received out of date.
Do	June 12-18	14	5	
Japan:				
Nagasaki	June 20-26	1	1	
Do	June 27-July 3	3		
Taiwan Island	May 21-31	1		
Java.				
East Java and Madura	May 8-21	4	2	
Mexico:				
La Oroya	Apr. 1-June 30			Present. Many deaths; number not known.
San Luis Potosi	July 10-16		1	
Portugal.				
Lisbon	July 3-9	1		
Siam				June 5-11, 1927: Cases, 27; deaths, 1. Apr. 1-June 11, 1927: Cases, 90; deaths, 22.
Straits Settlements				
Singapore	May 22-28	1	1	
Sumatra:				
Medan	June 5-11	2		

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria:				
Oran	June 21-30	8		
Egypt	May 28-June 17	79	16	
Alexandria	June 25-July 1	5	2	
Greece				May 1-30, 1927: Cases, 11.
Irish Free State (Ireland):				
Cork County	July 3-9	1		In urban district.
Poland				May 15-21, 1927: Cases, 107; deaths, 9.
Union of South Africa:				
Cape Province—				
Albany District	June 5-11			Outbreaks.
Natal—				
Impendhle District	do			Do.

Reports Received from June 25 to July 29, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-28	1	1	
Swatow	May 15-June 11	7	8	
India	Apr. 17-May 28			Cases, 30,334; deaths, 16,287.
Bombay	May 8-June 4	2	1	
Calcutta	do	319	204	
Karachi	May 29-June 4	1	1	
Rangoon	May 8-June 11	13	10	

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to July 29, 1927—Continued

CHOLERA—Continued

Place	Date	Cases	Deaths	Remarks
India, French Settlements in	Mar. 30-Apr. 30	4	2	
Indo-China (French):				
Saigon	Apr. 30-June 3	127	92	Including Cholon.
Philippine Islands:				
Bulacan Province	June 7	1		At Mambog, Malalos.
Leyte Province—				
Palo	May 18	1		
Siam	May 1-June 4			Cases, 107; deaths, 48.
Bangkok	do	26	7	

PLAGUE

Place	Date	Cases	Deaths	Remarks
Argentina:				
Formosa	Reported July 6	3		
Azores:				
St. Michaels Island	May 15-June 3	2		
British East Africa:				
Kenya	Apr. 24-May 7	7	14	
Tanganyika	Mar. 29-May 7		36	
Uganda	Jan. 1-Feb. 28	138	121	
Do	Mar. 27-May 14	72	57	
Canary Islands:				
Laguna District—				
Tejina	June 17	1		
Ceylon:				
Colombo	May 1-June 4	11	7	Plague rats, 4.
Egypt	May 21-June 22			Cases, 4; deaths, 1.
Alexandria	June 4-10	1		
District—				
Biba	do	1		At Nana.
Beni-Souef	do	1		
Port Said	June 22	1	1	
Tanta District	June 4-10	1		
Greece	May 1-31	1	1	
Patras	May 30-June 11	4		
India	Apr. 17-May 28			Cases, 20,657; deaths, 7,579.
Bombay	May 8-June 11	62	56	
Madras	May 1-21	21	9	
Rangoon	May 8-June 11	18	16	
Indo-China (French)	Apr. 1-May 10	7		
Iraq:				
Baghdad	Apr. 8-16	3	1	
Java:				
Batavia	May 1-June 11	87	88	Province.
East Java and Madura	May 22-28	6	6	
Pasoeroean Residency	May 9			Outbreak reported at Ngadiwono.
Surabaya	Apr. 17-May 7	24	24	
Madagascar				Mar. 16-Apr. 15, 1927: Cases, 184; deaths, 168.
Province—				
Ambositra	Mar. 16-Apr. 15	32	27	
Antisirabe	do	6	6	
Miarinarivo (Itasy)	do	82	32	
Moramanga	do	8	8	
Tananarive	do	102	91	
Tananarive Town	do	6	6	
Peru	Apr. 1-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	do	13	4	
Lima City	Apr. 1-30	5	1	
Senegal	May 23-June 26			Cases, 77; deaths, 25.
Baol	June 2-19	4	1	
Dakar	June 20-26	5	3	
Guindel	do	11	2	
Medina	June 13-19	2	2	
Rufisque	May 23-June 26	44	27	
Thies District	do	20	6	
Tivaouane	June 2-19	7	3	
Siam	Apr. 1-May 21			Cases, 8; deaths, 7.
Bangkok	May 8-14	1	1	
Tunisia	Reported May 20	15		In districts of Sfax and Susa.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to July 29, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Turkey:				
Constantinople	May 13-19	1		
Union of South Africa:				
Cape Province—				
Maraisburg district	May 1-14	2	2	Native.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-May 10	168		
Algiers	May 11-20	4		
Oran	May 21-June 30	34		
Brazil:				
Rio de Janiero	May 22-June 11	3	3	
British East Africa:				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 29-May 7		22	
British South Africa:				
Northern Rhodesia	Apr. 30-June 3	32		Native.
Canada	June 5-July 9			Cases, 173.
Alberta	June 12-July 9	48		
Calgary	June 12-25	5		
British Columbia—				
Vancouver	May 23-29	2		
Manitoba	June 5-July 9			Cases, 10.
Winnipeg	June 12-July 15	12		
Ontario	June 5-July 9			Cases, 99.
Ottawa	June 12-July 16	34		
Toronto	June 19-July 16	8		
Quebec	do	7		
Saskatchewan	June 12-July	16		
Ceylon	May 1-7			Cases, 3; deaths, 1.
China:				
Amoy	May 8-28	1		
Chefoo	May 8-14			Present.
Foochow	do			Do.
Hong Kong	May 8-June 11	12	13	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-June 5	3		
Dairen	May 2-8	3	3	
Fushun	May 15-June 5	9		
Mukden	May 22-28	2		
Ssupingkai	May 8-14	1		
Tientsin	May 8-28	11		
Chosen	Feb. 1-Apr. 30	354	84	
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr. 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr. 1-30	1		
Curaçao	May 29-June 4	1		Alastrim.
Egypt	May 7-27			Cases, 12; deaths, 2.
Alexandria	May 21-June 17	4	1	
Cairo	Jan. 22-28	3		
France	Apr. 1-30			Cases, 66.
Paris	May 21-June 30	8	2	
Gold Coast	Mar. 1-30	18	4	
Great Britain:				
England and Wales	May 22-June 18			Cases, 982.
Bradford	May 29-June 11	2		
Cardiff	June 19-July 2	4		
Liverpool	do	1		
London	May 15-June 18	2		
Newcastle on Tyne	June 12-July 2	2		
Sheffield	June 12-25	12		
Scotland—				
Dundee	May 29-July 2	5		
India	Apr. 17-May 28			Cases, 33,664; deaths, 8,535.
Bombay	May 28-June 11	75	49	
Calcutta	May 8-June 11	238	182	
Karachi	May 15-June 4	7	5	
Madras	May 22-June 18	7	2	
Rangoon	May 8-June 11	88	26	
India, French Settlements in	Mar. 20-Apr. 30	96	59	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to July 29, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Indo-China (French)	Mar. 21-Apr. 10	190		
Saigon	May 14-20	1	1	
Iraq:				
Baghdad	Apr. 10-16	2		
Basra	do	1		
Italy	Apr. 10-May 7	5		
Jamaica	May 29-June 25	9		Reported as alastrim.
Japan	Apr. 3-May 7	19		
Nagasaki City	Reported July 9	20		
Java:				
Batavia	May 22-28	1		
East Java and Madura	Apr. 24-30	1		
Latvia	Apr. 1-30	1		
Mexico				
Durango	June 1-30		1	
San Luis Potosi	May 29-July 2		6	
Tampico	June 1-10	1	1	
Morocco	Apr. 1-30	55		
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in two localities.
Persia.				
Teheran	Feb. 21-Apr. 20		5	
Poland	Apr. 10-May 14	6		
Portugal.				
Lisbon	May 29-July 2	11	1	
Siam	May 1-June 4			Cases, 12; deaths, 7.
Bangkok	May 15-28	4	2	
Spain.				
Valencia	May 29-June 4	2		
Straits Settlements.				
Singapore	Apr. 1-May 21	3	1	
Tunisia	Apr. 1-May 14	5		
Tunis	June 1-10	1		
Union of South Africa:				
Transvaal—				
Barberton District	May 1-7			Outbreaks.

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr 21-May 10	109	16	
Algiers	May 11-June 10	21		
Oran	May 21-June 30	22		
Bulgaria	Mar. 1-31	58	6	
Sofia	June 4-10	1		
Chile:				
Concepcion	May 29-June 4		1	
Ligua	Mar. 16-31	2		
China:				
Manchuria—				
Mukden	May 23-June 4	1		
Chosen	Feb. 1-Apr. 30			Cases, 330; deaths, 30.
Chemulpo	May 1-31	4		
Gensan	do	1		
Seoul	Apr. 1-May 31	9		
Czechoslovakia				Apr. 1-30, 1927: Cases, 21.
Egypt:				
Alexandria	May 21-June 3	3	1	
Cairo	Jan. 15-21	1		
Estonia	Apr. 1-30			Case, 1.
Iraq:				
Baghdad	Apr. 24-30	1		
Latvia	Apr. 1-30	12		
Mexico	Feb. 1-28			Deaths, 26.
Mexico City	May 29-June 11	7		Including municipalities in Federal District.
Morocco	Apr. 1-May 7	249		
Palestine	May 24-June 6			Cases, 3.
Haifa	do	2		
Mahnaim	May 17-23	1		In Safad District.
Safad	May 17-June 20	3		
Peru:				
Arequipa	Apr. 1-30		1	
Poland	Apr. 10-May 14	642	60	
Portugal:				
Lisbon	May 29-June 4	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to July 29, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Rumania	Apr. 3-May 7	583	41	
Tunisia	Apr. 21-May 10	78		
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa	Apr. 1-30			Cases, 55, deaths, 8, native. In Europeans, cases, 2.
Cape Province	Apr. 1-May 18	42	5	
East London	May 22-28	1		
Glen Grey District	May 1-7			Outbreaks.
Qumbu District	do			Do.
Natal	Apr. 1-May 21	7	3	
Orange Free State	Apr. 1-May 28	5		
Transvaal	Apr. 1-30	1		
Yugoslavia	May 1-31			Cases, 4.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Liberia:				
Monrovia	May 29-July 8	4	5	
Senegal	May 27			Cases, 3.
M'Bour	May 27-June 19	5	5	
Ouakam	June 2-8	1	1	
Tivaouane	May 27-June 8	5	5	

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Bubonic Plague and Maritime Quarantine

Diphtheria Immunization in Asbury Park, N. J.

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UNITED STATES PUBLIC HEALTH SERVICE

HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

Asst. Surg Gen C. C. PIERCE, *Chief of Division*

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CONTENTS

PUBLIC HEALTH REPORTS

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BUBONIC PLAGUE AND MARITIME QUARANTINE [1]

A SUGGESTED SYSTEM OF PLAGUE CONTROL, ASSUMING THAT THERE IS INFECTIBLE AND NONINFECTIBLE TERRITORY, DISCUSSING THE CHEOPIS INDEX AS A MEASURE OF INFECTIBILITY, AND ADVOCATING THE RAT-PROOFING OF SHIPS TO PREVENT THE SPREAD OF PLAGUE BY SEA

By S. B. GRUBBS, *Assistant Surgeon General, United States Public Health Service*

Health officers in America who have had to deal with both yellow fever and bubonic plague during the past 30 years must have noticed interesting points of resemblance and, at the same time, been impressed with the difference in results obtained. Thirty years ago yellow fever was probably the most important quarantinable disease in the Western Hemisphere. Its position was secure and it was little affected by sanitary rules or control. Plague, on the other hand, was just beginning to reappear. Now the positions are reversed. Yellow fever has been driven back until it is all but extinct. Plague has advanced almost at will across the seas and, once in a place, has remained, or has been suppressed only after considerable effort. The diseases, however, are similar in that yellow fever is transmitted by mosquitoes from man to man, and bubonic plague is transmitted by fleas from rat to rat. It would seem to those who have had experience with both diseases that, since the two are transmitted by insects, we should compare the methods of control, especially those intended to prevent the spread of the disease over the sea, if we would learn why the results have been so brilliant with yellow fever and so unsatisfactory with regard to plague.

It is from this standpoint that the following propositions will be presented and discussed in the light of the author's practical experience of nearly 30 years with both yellow fever and bubonic plague:

1. Yellow fever is confined to warm climates; when it was present on the North American Continent it was generally south of 38° north latitude. Bubonic plague during the present pandemic has remained within the warmer zones, roughly limited by 40° north and 40° south latitude, together with the ports of the Mediterranean and Black Seas.

2. Yellow fever is spread by one species of mosquito; the *Aëdes aegypti*. Bubonic plague is ordinarily spread by one species of flea; the *Xenopsylla cheopis*.

3. A certain number of insect carriers is necessary if an insect-borne disease is to spread. It is not possible to count the actual

[1] Received for publication Mar. 15, 1927.

number of insects as a whole; but if their relation to some object that may be easily examined can be determined, this will give the degree or index of infectibility. For plague the *cheopis* index is suggested. This would be the average number of *X. cheopis* per live rat examined.

4. In yellow-fever control, the destruction of adult *Aedes aegypti* is no longer attempted, all efforts being concentrated to prevent the breeding and maturing of larval forms. In plague it is not practicable to take measures directly against the insect carrier. The attack must be made against its hosts, the rats. The destruction of adult rats, however, is as unprofitable as measures against adult mosquitoes in yellow fever, and our efforts should all be concentrated to prevent breeding and the development of the immature forms, namely, the young rats.

THE GEOGRAPHICAL LIMITS OF PLAGUE

It is commonly stated that disease knows no boundaries. This is true for international lines; but certain diseases at least have clearly defined limits of their own, which are quite fixed at present, but if viewed over a long period of time show a tendency to change. Climate has a certain influence in fixing the geographical limits of disease, but usually more specific factors are discovered as soon as investigations are carried far enough. As well known a disease as malaria is a good example. The localities where it exists to-day can be definitely plotted on a map, but this would be far different from a similar map made 20 years ago or one made 40 years ago. The disease and its means of spread have not changed, neither has the climate to any extent; but conditions that favor the breeding of *Anopheles* mosquitoes, in many parts of the United States at least, have ceased to exist on account of better drainage in the city and on the farm. The limits of plague and yellow fever have also changed, and it is possible in each case to give a reasonable explanation.

Early in the nineteenth century, outbreaks of yellow fever occurred in Philadelphia, New York, Boston, Baltimore, and other places as far north as Quebec. It was recognized that these were unusual, and we now believe that they were due to the rare combination of sailing vessels on which there were yellow fever cases, plus *Aëdes ægpyti* breeding on board and in water containers on shore, which allowed this breeding to continue so long as warm weather lasted. The eminent yellow fever authority, Juan Guiteras, recognized three areas of infection: The focal zone, the perifocal zone, and the zone of accidental epidemics. The so-called accidental epidemics ceased to exist long before the mosquito was thought of in connection with yellow fever. The change, therefore, did not depend upon human control, but was brought about by changes in the type of ships and in business and living conditions on the water front.

The changes in the geographical limits of plague may seem more difficult to accept, as this disease is comparatively new to us, the present so-called pandemic having existed about 30 years. Plague spread over Europe during the Middle Ages and seemed as virulent in the northern as in the southern part. When, after a latent period, it reappeared late in the nineteenth century, it faced a different world. When one reads of the terrible conditions under which men worked and lived in the days of the old plague, it is easy to understand that rats were more numerous and supported more fleas that transmit plague. The crowded, filthy living quarters undoubtedly simulated those now in warmer climates and allowed multiplication of the *X. cheopis* which, under modern living conditions, is comparatively rare in northern Europe.

Thus it will be seen that long before it was suspected that yellow fever was transmitted by a mosquito, it was believed that this disease would not spread in America north of the southern boundary of Maryland, which is about 38° north latitude. This was determined empirically, and was not only the basis of quarantine regulations but had great economic significance. Years after this arbitrary line, based on experience, had been determined, it was found that it corresponded accurately with the northern limit of the breeding of *Aëdes ægypti*. Similar observations have been made regarding plague, and quite early in the present pandemic it was observed that in India (1), where the disease was widespread, certain localities did not become infected (2) (3). These were spoken of as "islands of immunity within a sea of plague." The low-lying southern and eastern portions of the Madras Presidency escaped the disease (4), and, in Ceylon, Colombo remained immune for a considerable time, although plague was introduced and conditions were apparently favorable for its spread (5). Agra has no plague, while in Cawnpore it is severe (3). In spite of their extensive commerce with all parts of the world, the great ports of North America (6) and Europe have remained free from plague and may be presumed to be unfavorable soil for this disease. It has actually been introduced into certain ports, such as Liverpool and London, where its occurrence has terminated with a promptness that can not be entirely attributed to the excellent measures taken (7).

Beginning with the work of the Indian Plague Commission (5) and following that of Cragg (8), Hirst (9), Liston (10), White (11), Fox (12), and others, evidence has been accumulating that the *X. cheopis* is the only flea that need be considered, at least in maritime quarantine against plague. The discovery, in 1911 (5), that the predominant flea in the immune areas of India and Ceylon was *Xenopsylla astia*, and not *Xenopsylla cheopis* made possible the assertion that the presence or absence of *cheopis* is the determining factor in the infectibility

or noninfectibility of these localities. The same may be said for the ports of northern Europe and of the United States, which are in a cooler climate and in which *Ceratophyllus fasciatus* is the predominant flea and occupies the position held by *astia* in the Tropics. Both *fasciatus* and *astia* (4), as well as certain other species, may, exceptionally, transmit plague from rat to rat; but the evidence is convincing that in nature this does not occur with sufficient frequency to maintain an epidemic.

We now have the benefit of 30 years of modern experience with plague and its spread by commercial carriers, and it is entirely reasonable to assume that in this time it has outlined the areas where the bubonic type can spread under modern conditions and that, in general terms, these are between 40° north and 40° south latitude, together with the districts about the Mediterranean and the Black Sea. This assumption is based upon experience in some ways as convincing as that which first determined the limits of yellow fever; and if the cases are at all parallel, a study of rats and their ectoparasites within and without the infectible areas should make possible the determination of the relative number of insect vectors, that is, *X. cheopis*, necessary to allow the disease, once introduced, to spread.

Cragg states (8): "If it is really the case that *cheopis* is the 'plague flea' while *astia* is not, it will be possible, by an examination of the fleas of a locality, to estimate precisely its liability to plague; in fact, to map out '*cheopis*-belts' just as the 'fly belts' of Africa have been mapped out. It would clearly be unnecessary to take elaborate and expensive measures against plague in a district in which the rat fleas were a species which is not a vector of plague. The significance of an imported case of plague will depend in a large measure on the local species of flea."

Hirst states (13): "It is generally recognized that the spread of plague is influenced by a number of factors varying in importance according to circumstances; * * * the susceptibility of the rats to plague infection; the number of fleas per rat, i. e., the flea index; climate; means of communication * * *."

CHEOPIS INDEX TO MEASURE INFECTIBILITY

The term "flea index," however, that we have been using for several years is too indefinite, and it is suggested that "*cheopis* index" be substituted and that this index be the average number of *X. cheopis* per live rat, disregarding all other species of fleas. The critical *cheopis* index would then be the lowest average number of *X. cheopis* per rat necessary for plague to spread from rat to rat in an increasing ratio. It is admitted that other factors, especially the density of the rat population, will have an influence; but these other factors will be secondary. While the *cheopis* index in plague would seem to be of

less importance than the *stegomyia* index in yellow fever (the latter is easily influenced while the *cheopis* index is not), still as a measure of infectibility it may prove to be of distinct value, both in quarantine and plague suppressive measures.

Practically all of the flea surveys made until recently have given the percentages of the various species of fleas obtained, especially the ratio of *cheopis* to other varieties; but this has given no basis upon which the degree of infectibility can be determined. Cragg wrote in 1923 (2): "The available figures refer only to the relative percentage of *cheopis*. A more suitable figure would be the average number of this species per rat." A certain amount of work, however, has been done which bears directly on this proposition. In Liverpool (14) an investigation covering practically an entire year demonstrated that, although *cheopis* predominated on rats on board vessels arriving from foreign ports, averaging 1 per rat, *fasciatus* was more common on rats taken along the waterfront section of the city where *cheopis* averaged but 0.1 per rat, and *fasciatus* was almost the only flea found on rats caught in the city proper. Plague rats have reached Liverpool from vessels; and although limited outbreaks of human plague cases have occurred, some attributed to *Pulex irritans* by Letham (15), no appreciable epizootic has resulted.

Flea surveys have been undertaken in the United States at various times. They show that, in New Orleans, where plague has occurred, the average number of *cheopis* per rat was nearly 3 in May and June, 1916, and was 1.71 per rat in the 12 months beginning July 1, 1921. In Pensacola, Fla., in 1921, the year in which 36 plague-infected rats were found, the average number of *cheopis* per rat was 6.1. On the other hand, in New York, April 18, 1923 to February 28, 1925, a period of 22 months, an examination of 4,756 rats gave a *cheopis* index of 0.2165; and only in one month did this exceed 1 (October, 1923), when it was 1.25. In Boston, 1922–23, 1,524 rats gave a *cheopis* index of 0.8 per rat (16).

Some three years ago a flea survey was undertaken at the New York Quarantine Station specifically to determine the *cheopis* index at New York and at other ports where possible. It has since been extended to San Juan, P. R., Savannah, Ga., Norfolk and Newport News, Va., all reporting to New York. The Pan American Sanitary Bureau has requested the nations of Central and South America to cooperate (17), and Ecuador has responded. Practically all the figures so far available indicate that as we go north the number of *cheopis* decreases, and that it is usually less than one per rat north of 40° north latitude. It may be entirely premature to state that one *cheopis* per rat is the critical *cheopis* index, but possibly this is near enough to serve as a basis for further investigation.

As compared with the *stegomyia* index for yellow fever, certain disadvantages are easily seen. It is more difficult to examine rats than houses, the index is little affected by control measures, and the seasonal variation of *cheopis* in certain climates is considerable. Therefore, this index will probably be of less use in the control of actual plague epidemics than is the *stegomyia* index in yellow fever; but as a basis for maritime quarantine, as a record that is before us to be read from year to year, it should be of great value. Just as improvements on farm and in city have often changed the malarial situation, so better building changes the rat situation and probably the flea situation as well. This change could be watched even if nothing is done to advance it. It would be well worth while for every seaport at least to know its *cheopis* index by zones, as does Liverpool (14), where they know that *cheopis* are confined to the waterfront and feel that the rest of the city may be ignored when combating imported plague. It has been said that plague or no plague is a matter of good health departments. This is surely a factor, as a good health department should, by periodic flea surveys, plot the *cheopis* index of each part of the city, in order to watch and encourage the elimination of rat conditions that favor breeding and to know the weak spots should danger threaten.

PLAGUE CONTROL BY RESTRICTING RAT BREEDING

In modern operations against yellow fever as practiced in the United States and in the drive of the International Health Board to exterminate this disease, the entire attack is now concentrated at one point; namely, to decrease the *breeding* of the disease carriers. No longer does the yellow-fever fighter take time to hunt out the sick, although they may be infectious, nor does he fumigate to kill mosquitoes, although they may be infected. He destroys mosquito breeding places (fresh-water containers) or makes them unsuitable for mosquito breeding by screening or by the introduction of fish to eat the larvae.

It has long been known that it profits little to destroy the mature form of any animal or insect pest. "Swat the fly" may be a popular slogan, and screens may be useful, but the only efficient method is to stop fly breeding. To quote one of the axioms of the late H. R. Carter (Assistant Surgeon General, U. S. Public Health Service), "The only way to control a biological pest is to restrict its breeding."

Of the two forms of life that carry plague to man, the rat can be controlled easier than the flea which he harbors, and it is right to give him our undivided attention; but unless we work to prevent rat breeding, results must be expensive and unsatisfactory. Paterson (18) reports over 300,000 rats killed in an extensive campaign in Kenya, but concludes, "We are not yet killing enough rats to appreciably affect their numbers, which would appear to continue to be

effectually limited by the available shelter and food supply." The United States Public Health Service has for 20 years preached that, to control rats and plague, we must build houses that will afford no place where rats can breed and raise their young (19). It has shown how one pair can produce 600 rats in 18 months *if conditions are favorable;* but, it has also been shown that it is possible to make conditions unfavorable for rat breeding. It has declared officially "There is only one way to eliminate the rat. It must be built out of existence. All other measures produce only very temporary results" (20).

Notwithstanding, maritime quarantine methods against plague rely almost entirely upon the fumigation of ships, although it is admitted that fumigation as ordinarily done can not kill all the rats on board any given ship. This was shown by the "outgoing quarantine" at Porto Rico in 1912, where, on account of the severe infection on shore, great pains were taken to insure that each ship allowed to sail was absolutely rat-free (21). Fumigation has been controlled by trapping at New York (22) and New Orleans (23), and in both cases it was found that additional rats could be caught immediately after fumigation in sufficient numbers to show that fumigation had not been more than 70 to 80 per cent efficient. Where ships have been refumigated on account of suspected plague infection, the second, third, and often the fourth fumigations have yielded considerable numbers of rats. It is, therefore, no wonder that plague has continued its steady march to all ports of the world within the infectible zone. On the other hand, a ship with few or no rats does not carry plague, and the permanent rat population of a ship will remain below the danger point upon those vessels originally built without rat harbors, such as most tankers and certain vessels constructed under rat-proof specifications or those subsequently "rat proofed."

A "rat-proof ship" is simply one that has no permanent rat harborages and on which rats can not go from one compartment to another except by the passageways designed for man. On such a ship it is impossible, or difficult, for rats to hide, nest, or travel about in search of food. Rats may get on such a ship, but, once on board, it will be impossible or difficult for them to hide, except temporarily, and they can not move from one compartment to another in search of food and water. "In other words, they will be confronted with the high cost of living due to an acute housing problem and poor transportation between home and business (food getting). Laboring under these disadvantages, rats will be exposed to acute rivalry among themselves, to their enemies, and to starvation. They will breed with difficulty and, instead of multiplying, will decrease or even disappear" (24). Ship rat proofing has passed the experimental stage. Many of the large vessels entering New York have completed the work. It

was done by the owners without any Government coercion. The United States Navy and the Army Transport Service have recognized the value of rat proofing and are making practical use of it on their vessels.

Since a ship is not dangerous unless it has on board a certain number of rats, fumigation or any other form of deratization may be omitted if this number is not present and if, in addition, conditions—which means rat harborage—are not favorable for breeding. The Liverpool port sanitary authorities for the past 20 years have employed rat searchers who devote their whole time to searching ships and quays for sick or dead rats, four ordinarily working on ships arriving from ports where plague has been prevalent during recent times, and one on the docks. This work has many times demonstrated its value in detecting plague on vessels before it could be found in rats taken by trapping or fumigation. The port sanitary inspectors inspect systematically the dock area for rat evidence and rat harborage for the enforcement of rat proofing.

At that port, fumigation of ships is required only when there is any suspicion of plague infection among the rats on board, to comply with the requirements of certain foreign governments, and when the investigations of the rat searchers and rat catchers indicate that the vessel is "rat infested." Each rat catcher and rat searcher "is supplied with an electric torch, and by noting such evidence of rats as the quantity of excreta and whether it is fresh or stale, runs and holes, the gnawing of woodwork, damage to cargo, etc., they are able to judge the degree to which a vessel is rat infested" (25).

It has always been assumed that but a small number of rats get aboard or leave a ship in cargo; hence the practice in the United States of allowing vessels to discharge before fumigation. Recent investigations confirm this view and show that a large proportion of all rats on ships are born on board and that the rat population will remain as large as rat-living conditions will allow. This permanent rat population is the real danger. It can be reduced by ratproofing on ships with greater certainty than on shore where it has long been practiced. Trapping and fumigation are excellent measures, but their effects are temporary.

It has been shown that by careful examination the number of rats can be estimated with considerable accuracy, as it is theoretically possible to locate the home and trace the nightly trips of each rat (26). This was demonstrated in 1913, when a detailed inspection and elaborate preparation of the ship were shown by Grubbs and Holsendorf to be a prerequisite of a satisfactory fumigation (21). It was shown at that time that rats will be found wherever they have protection, and it was next seen that if each harborage must be located and opened before a perfect fumigation can be done, we might just as well

abolish permanently these harborages, after which fumigation becomes of secondary importance.

It requires a trained and conscientious personnel to make an accurate and satisfactory inspection to locate rat infestation and harborage (but not much more so than is needed for good fumigation). It is advantageous that the conditions looked for do not change rapidly, so that the accuracy of such inspections may be checked any time. It is, of course, essential that such an inspection be made only when the part inspected is empty, but it need not necessarily all be done on the same day. The superstructure can be inspected almost any time, and the various cargo spaces and storerooms as they happen to be empty. Detailed records should be kept showing the exact condition of each and every part of the ship. It seems reasonable to suggest that deratization (fumigation) should be required of a ship showing any rat infestation whatever, or any appreciable rat harborages, if the vessel is from an infected port. It would probably be safe to allow, tentatively, five rats on vessels from noninfected ports of a high degree of infectibility—that is, between 40° north and 40° south latitude—and 10 rats from ports of a low degree of infectibility—that is, north of 40° north and south of 40° south latitude. If any appreciable amount of rat harborages exists, it must be assumed that rats may be or can be present, and in that case deratization, or abolition of the harborage, is called for.

Maritime quarantine, when operating at its maximum efficiency, has been compared to a screen that holds back the grosser impurities but allows commerce to flow through it without impediment. If, in striving for perfection, this screen is made too fine, it will block the stream so that it will break down the obstruction or flow around it. Constant study is necessary to determine the usual routes of infection in order that they may be blocked; but despite laboratory demonstrations, those obviously not commonly followed in nature should be disregarded in quarantine, or quarantine becomes complicated and burdensome.

CONCLUSIONS

1. The present plague pandemic has existed over a period of 30 years, during which time plague has probably been brought to most of the ports of the world. In some of these ports this infection remains to-day or was suppressed with great effort; in others it gained no footing or died out with little or no intervention. The former may be considered infectible; the latter noninfectible or infectible with difficulty.

2. Infectible ports are apparently included in a zone between 40° south latitude and 40° north latitude, plus the ports of the Mediterranean and Black Seas.

3. *Xenopsylla cheopis* is probably the only flea that transmits plague from rat to rat in nature; and if this is true, for the purposes of maritime quarantine other species may be disregarded.

4. A *cheopis* index will measure the infectibility of any locality to plague. It is suggested that this index be the average number of *X. cheopis* per live rat. The critical *cheopis* index would then be the figure above which plague once introduced would increase. This critical point may be determined by repeated studies of the *cheopis* index in ports shown to be infectible and those apparently non-infectible.

5. The number of rats on board a vessel may be estimated with reasonable accuracy by means of a detailed inspection by a trained inspector.

6. On vessels, as well as in buildings, the number of rats is limited by the amount of rat harborage and available food. The most economical way, and the only permanent way, to get rid of rats is to build them out (rat proof).

7. Rat proofing will reduce the number of rats that can survive on board a ship to zero or to a negligible number. Rat proofing on vessels follows the same principle as rat proofing in buildings, but has the advantage of a rat-proof foundation furnished by the sea. Eliminate rat harborage, make food unavailable, and stop rat travel from one part of a ship to another and the existence of rats on a ship becomes almost impossible.

8. Rat proofing of vessels is practicable and has demonstrated its value in dollars and cents to the ship owner. If made a part of the original construction of the ship, it need add no extra cost. If done later, the cost is slight and is far outweighed by the benefits.

9. The need of fumigation or similar measures to destroy rats presupposes the presence of rats on board a vessel. If a vessel is rat free, fumigation to kill rats is manifestly unnecessary, regardless of the sanitary condition of ports that have been visited by the vessel.

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DIPHTHERIA IMMUNIZATION IN ASBURY PARK, N. J.

Immunization against diphtheria was begun among the children of the public schools in Asbury Park, N. J., in 1923, and has been continued to date. In that year Schick tests were made on 170 school children 4 to 16 years of age. One hundred and twenty-two of these children were found to be susceptible and were immunized by a series of three injections of toxin-antitoxin. After a period of six months, the Schick test was again applied, and all who were found positive were given a second series of injections of the toxin-antitoxin mixture. The same procedure was followed in 1924. In 1925 the plan of giving the toxin-antitoxin injections to all pupils under 7 years of age was begun, the first injection being a Park test. A record was kept of those found susceptible, but all were given the series of toxin-antitoxin injections. After one year, Schick tests were made, and pupils showing a positive reaction received a second series of immunizing doses. The second series was not followed by a Schick test. This practice has been continued since 1925.

During the period 1923 to date, 2,036 Schick tests and 1,278 Park tests have been given, 1,023, or 50.2 per cent, of the former and 934, or 73.1 per cent, of the latter being positive. These pupils received one or more of the series of toxin-antitoxin injections with no unfavorable result in any instance.

Health Officer B. H. Obert, who has furnished the information regarding this work, states that the Bureau of Education and the Board of Health cooperated, the former furnishing the physician and public-health nurse, the latter supplying the material and the services of its staff. This included one person to bear the arm, one to prepare the site, one to fill the syringe, and a recorder, thus leaving for the physician simply the administration of the material. With this system the prophylactic treatments were given at the rate of from 80 to 100 pupils per hour.

The diphtheria record for Asbury Park from 1920 to 1926, inclusive, is as follows:

Year—	Cases
1920	12
1921	8
1922	12
1923	1
1924	7
1925	3
1926	1

The same number of cases of diphtheria were recorded in each of the years 1920 and 1922—the year before the work was begun—as were recorded in the four years 1923–1926.

The following tables, furnished by Health Officer Obert, summarize the work by years and give the percentages of susceptibles found, by age and by sex:

Schick tests (primary), 1923

Age	Males		Females		Totals			Per cent susceptible		
	Susceptible	Immune	Susceptible	Immune	Total	Susceptible	Immune	Males	Females	Total
4	0	0	0	0	0	0	0	0	0	0
5	3	0	2	0	5	5	0	100	100	100
6	9	2	6	3	20	15	5	82	67	75
7	9	3	9	1	22	18	4	75	90	82
8	7	7	6	1	21	13	8	50	86	65
9	8	1	5	6	20	13	7	88	46	65
4–9	36	13	28	11	88	64	24	74	72	73
10	11	2	8	4	25	19	6	85	67	76
11	8	6	5	2	21	13	8	57	71	62
12	5	3	3	1	12	8	4	62	75	67
13	6	0	6	1	13	12	1	100	86	92
14	1	5	1	0	7	2	5	16	100	29
9–14	31	16	23	8	78	54	24	66	74	69
15	1	0	1	0	2	2	0	100	100	100
16	0	0	2	0	2	2	0	0	100	100
15–16	1	0	3	0	4	4	0	100	100	100
Adults	0	0	0	0	0	0	0	0	0	0
Total	68	29	54	19	170	122	48	61	74	72

Schick tests (primary), 1924

Age	Males		Females		Totals			Per cent susceptible		
	Susceptible	Immune	Susceptible	Immune	Total	Susceptible	Immune	Males	Females	Total
4	4	3	8	0	15	12	3	57	100	80
5	19	4	11	1	35	30	5	83	91	85
6	23	1	22	4	50	45	5	95	84	90
7	30	18	46	8	102	76	26	62	85	74
8	23	14	43	24	104	66	38	62	64	63
9	25	18	40	20	103	65	38	58	66	63
4-9	124	58	170	57	409	294	115	68	75	73
10	22	20	30	11	83	52	31	52	73	62
11	29	14	35	12	90	64	26	67	74	71
12	30	19	31	13	93	61	32	61	71	65
13	26	10	26	8	70	52	18	72	76	74
14	20	14	25	7	66	45	21	58	78	68
9-14	127	77	147	51	402	274	128	62	74	68
15	11	5	7	7	30	18	12	68	50	60
16	8	1	9	1	19	17	2	88	90	89
15-16	19	6	16	8	49	35	14	76	67	72
Adults	1	1	14	7	23	15	8	50	66	65
Total	271	142	347	123	883	618	265	66	74	70

Park tests, 1925

Age	Males		Females		Totals			Per cent susceptible		
	Susceptible	Immune	Susceptible	Immune	Total	Susceptible	Immune	Males	Females	Total
4	11	2	12	3	28	23	5	85	80	82
5	31	16	24	9	80	55	25	66	10	69
6	30	20	37	10	97	67	30	60	80	69
7	23	7	22	8	60	45	15	77	73	33
8	13	9	20	4	46	33	13	59	83	72
9	12	4	21	2	39	33	6	75	91	15
4-9	120	58	136	36	350	256	94	67	79	73
10	14	9	21	3	47	35	12	61	88	74
11	14	1	13	5	33	27	6	66	72	81
12	8	6	8	3	25	16	9	57	73	64
13	9	9	4	4	26	13	13	50	50	50
14	4	7	5	3	19	9	10	36	63	47
9 14	49	32	51	18	150	100	50	61	74	66
15	2	3	2	2	9	4	5	40	50	44
16	1	4	2	0	7	3	4	20	100	43
15-16	3	7	4	2	16	7	9	30	66	44
Adults	3	2	6	1	12	9	3	60	86	75
Total	175	99	107	57	528	372	156	64	78	70

Schick tests (secondary), 1925

Age	Males		Females		Totals			Per cent susceptible		
	Susceptible	Immune	Susceptible	Immune	Total	Susceptible	Immune	Males	Females	Total
4	0	5	0	5	10	0	10	0	0	0
5	0	7	1	6	14	1	13	0	14	6
6	2	14	3	22	41	5	36	13	12	12
7	9	14	6	17	46	15	31	39	26	35
8	7	18	13	21	59	20	39	28	36	34
9	11	13	6	23	53	17	36	46	21	32
4-9	29	71	29	94	223	58	165	29	23	26
10	4	18	10	18	50	14	36	18	36	28
11	5	16	7	10	38	12	26	24	41	32
12	6	8	6	10	30	12	18	43	38	40
13	7	12	10	8	37	17	20	37	18	46
14	2	3	1	12	18	3	15	40	8	17
9–14	24	57	34	58	173	58	115	30	37	34
15	4	2	3	5	14	7	7	66	38	50
16	2	2	3	3	10	5	5	50	50	50
15-16	6	4	6	8	24	12	12	60	43	50
Adults	1	0	5	2	8	6	2	100	71	75
Total	60	132	74	162	428	134	294	31	69	32

Park tests, 1926

Age	Males		Females		Totals			Per cent susceptible		
	Susceptible	Immune	Susceptible	Immune	Total	Susceptible	Immune	Males	Females	Total
4	3	0	0	0	3	3	0	100	0	100
5	20	3	24	2	49	44	5	87	92	90
6	14	7	17	3	41	31	10	66	85	75
7	12	6	13	6	37	25	12	66	68	68
8	14	13	10	5	42	24	18	52	66	57
9	7	6	12	7	32	19	13	54	63	59
4–9	70	35	76	23	204	146	58	66	77	71
10	6	6	9	0	21	15	6	50	100	71
11	8	7	13	3	31	21	10	53	81	68
12	8	6	9	1	24	17	7	57	90	71
13	5	7	6	4	22	11	11	42	60	50
14	7	7	6	1	21	13	8	50	86	61
9–14	34	33	43	9	119	77	42	60	83	65
15	2	3	1	0	6	3	3	40	100	50
16	2	3	1	0	6	3	3	40	100	50
15–16	4	6	2	0	12	6	6	40	100	50
Adults	0	0	1	0	1	1	0	0	100	100
Total	108	74	122	32	336	230	106	50	79	68

Schick tests (secondary), 1926

Age	Males		Females		Totals			Per cent susceptible		
	Susceptible	Immune	Susceptible	Immune	Total	Susceptible	Immune	Males	Females	Total
4	0	0	0	1	1	0	1	0	0	0
5	0	1	0	3	4	0	4	0	0	0
6	5	10	8	18	41	13	28	33	31	32
7	7	17	9	18	51	16	35	29	33	32
8	5	15	2	11	33	7	26	25	15	21
9	1	13	4	14	32	5	27	6	22	21
4-9	18	56	23	65	162	41	121	24	26	25
10	2	12	4	13	31	6	25	14	23	19
11	2	7	4	23	36	6	30	22	15	17
12	3	12	3	9	27	6	21	20	25	22
13	4	7	5	6	22	9	13	36	45	41
14	2	3	3	6	14	5	9	40	33	36
9-14	13	41	19	57	130	32	98	25	25	25
15	0	3	1	2	6	1	5	0	33	83
16	0	0	1	2	3	1	2	0	33	33
15-16	0	3	2	4	9	2	7	0	20	22
Adults	1	0*	2	4	7	3	4	100	50	43
Total	32	100	46	130	308	78	230	24	26	25

Park tests, 1927

Age	Males		Females		Totals			Per cent susceptible		
	Susceptible	Immune	Susceptible	Immune	Total	Susceptible	Immune	Males	Females	Total
4	3	1	11	0	15	14	1	75	100	93
5	27	2	32	1	62	59	3	93	97	95
6	32	3	26	3	64	58	6	91	90	91
7	30	4	10	3	47	40	7	88	77	85
8	19	5	15	4	43	34	9	56	79	81
9	11	5	10	4	30	21	9	69	71	70
4-9	122	20	104	15	261	226	35	86	87	87
10	12	5	10	5	32	22	10	71	66	69
11	8	6	13	7	34	21	13	57	65	62
12	5	5	14	0	24	19	5	50	100	79
13	5	4	12	0	21	17	4	56	100	81
14	3	2	6	2	13	9	4	60	75	69
9-14	33	22	55	14	124	88	36	60	80	71
15	7	3	2	1	13	9	4	70	66	69
16	1	3	3	2	9	4	5	25	60	44
15-16	8	6	5	3	22	13	9	57	63	59
Adults	0	1	5	1	7	5	2	0	83	71
Total	163	49	169	33	414	332	82	77	84	80

Schick tests (secondary), 1927

Age	Males		Females		Totals			Per cent susceptible		
	Susceptible	Immune	Susceptible	Immune	Total	Susceptible	Immune	Males	Females	Total
4	0	0	0	0	0	0	0	0	0	0
5	0	3	0	1	4	0	4	100	0	0
6	7	12	4	16	39	11	28	37	20	28
7	5	12	9	7	33	14	19	29	56	33
8	1	9	5	8	23	6	17	10	38	26
9	6	12	3	12	33	9	24	33	20	27
4-9	19	48	21	44	132	40	92	28	32	28
10	6	8	5	12	31	11	20	43	29	35
11	1	5	3	7	16	4	12	17	30	25
12	1	4	5	7	17	6	11	20	42	35
13	0	7	4	4	15	4	11	0	50	27
14	0	8	3	7	18	3	15	0	30	17
9-14	8	32	20	37	97	28	69	20	35	29
15	0	4	0	2	6	0	6	0	0	0
16	0	1	0	3	4	0	4	0	0	0
15-16	0	5	0	5	10	0	10	0	0	0
Adults	2	0	1	5	8	3	5	100	17	33
Total	29	85	42	91	247	71	176	25	32	29

Summary of Schick and Park tests in Asbury Park, 1923 to 1927, inclusive

	Schick	Park
Total number of tests	2,036	1,278
Males	948	668
Females	1,088	610
Total found susceptible	1,023	934
Males	460	446
Females	563	488
Total number found immune	1,013	344
Males	488	222
Females	525	122
Per cent found susceptible	50.2	73.1
Males	48.5	66.8
Females	51.7	80.0

STATE HOSPITALS AS RESEARCH UNIT IN THE STUDY OF MENTAL DISEASES

The Massachusetts Department of Mental Diseases has instituted a novel and promising experiment in the field of mental research, the development of which will be watched with considerable interest by psychiatrists. It is planned to make use of the State hospital system in Massachusetts in the scientific study of psychiatry and mental hygiene, and of the development of the epidemiology of mental diseases and mental deficiency. These institutions afford a mass of data which can be readily and economically made available and which, when studied and analyzed, will no doubt add materially to the knowledge of mental diseases that has so far for the most part been contributed by studies of individual cases.

There is printed below an excerpt from the presidential address delivered by Dr. George M. Kline, commissioner of mental diseases of Massachusetts, at the eighty-third annual meeting of the American Psychiatric Association, held at Cincinnati, May 31 to June 3, 1927. This excerpt is taken from the Monthly Bulletin for June, published by the Massachusetts Society for Mental Hygiene.

No State hospital system can adequately or conscientiously fulfill its duty to the public and to suffering humanity without giving considerable thought to the question of research. Without the research spirit and without the development of an adequate machinery for research, we can make progress only by intuition or by guesswork. It has gradually come to me that the centralization of the State hospitals is not only of prime value to administration, but is essential to research in our field. The State is, indeed, the logical unit to undertake research of this sort. This is true for many reasons. First, statistically speaking, the effects of emigration and immigration are greatly minimized because of the large population found in a State. Second, in most States, systems of vital statistics have been developed which we can utilize in our studies. Third, we have a larger amount of disease and disorder affecting the human population under observation. treatment, and control in our State hospitals than we have in any other type of disease whether mental or physical.

Our vital statistics of to-day, excellent as they may be, concern themselves almost always, when they are reasonably adequate, with deaths, births, marriages, and divorce. On the other hand, in the field of morbidity—that is, of illness—we find that present-day statistics are in the main quite inaccurate and often valueless. However, in the case of a State hospital system there is under observation and under control probably the majority of the persons seriously ill with mental disease. The State hospital system, well centralized, therefore offers a wonderful opportunity to make studies of morbidity in the field of mental disease which is far superior to any study of morbidity which to-day can be made in the other fields of medicine.

Every effort is now being made by intelligent State departments of health and by the United States Public Health Service to make fairly accurate studies of morbidity, feeling that in these studies lies the possibility of a very great advance in preventive medicine. It is equally desirable that funds be made available for a study of morbidity in the field of mental disease and mental deficiency. With a well-centralized State hospital system like that in Massachusetts this is certainly not impossible and can be done economically. I hope that in the near future the Massachusetts Department of Mental Diseases will make, by a scientific study of morbidity, a monumental contribution to psychiatry and mental hygiene and, incidentally, to the development of the epidemiology of mental disease and mental

deficiency. In my opinion, an analysis of the mass data which a centralized State system economically makes available will result in scientific information of value equal to, if not greater than, that which has already been contributed by studies of individual cases.

COURT DECISIONS RELATING TO PUBLIC HEALTH

Statute prohibiting the sale and manufacture of oleomargarine declared void.—(Wisconsin Supreme Court; John F. Jelke Co. *v.* Emery, State Dairy and Food Commissioner, and three other cases, 214 N. W. 369; decided June 20, 1927.) Chapter 279 of the 1925 session laws added the following new section to the statutes:

352.365 (1) It shall be unlawful for any person, firm, or corporation, by himself, his servant or agent, or as servant or agent of another, to manufacture, sell or solicit or accept orders for, ship, consign, offer or expose for sale or have in possession with intent to sell, any article, product or compound which is or may be used as a substitute for butter and which is made by combining with milk or milk fats or any of the derivatives of either any fat, oil, or oleaginous substance or compound thereof other than milk fat.

(2) Any person violating this section shall, for the first offense, be punished by a fine of not less than $50 nor more than $500, and for each subsequent offense by imprisonment in the county jail not less than 10 days nor more than six months or by a fine of not less than $100 nor more than $500, or by both such fine and imprisonment.

The enforcement of this law by the State dairy and food commissioner was sought to be enjoined on the ground that it was violative of the State and Federal constitutions. The trial court held the act unconstitutional and its judgment was affirmed by the supreme court. The following are extracts from the latter court's opinion:

We shall therefore, in considering the questions raised, regard the statute as one which prohibits the sale and manufacture of oleomargarine, as that term is known and understood both in law and in commerce. * * *

Chapter 279 was passed in the exercise of the police power. It prohibits the carrying on of a legitimate, profitable industry and the sale of a healthful, nutritious food. This prohibition can only be justified upon the ground that it is necessary in order to protect the public health, public morals, public safety, prevent fraud, or promote the public welfare. As already indicated, the public health is not endangered by the manufacture and sale of oleomargarine, and certainly no question of morals is involved. There is not the slightest evidence that the prohibition is justified in order to prevent fraud, because under the evidence there is no fraud, and certainly there is not such a state of affairs as enables the court to take judicial notice of a fact which in five years has not come to the attention of the dairy and food commissioner. * * *

It would seem that decisions could not make plainer the fact that any law which prohibits the manufacture and sale of uncolored oleomargarine violates the Constitution of the United States and of the State of Wisconsin. * * *

We are next urged to hold the act valid on the ground that the legislature, in order to protect the Wisconsin dairy industry from unfair competition, may

prohibit the manufacture and sale of oleomargarine. There is no basis in the evidence upon which a claim of unfair competition can be based. * * *

Under the facts proven in this case, whatever the economics of the situation may be, from the standpoint of constitutional right the legislature has no more power to prohibit the manufacture and sale of oleomargarine in aid of the dairy industry than it would have to prohibit the raising of sheep in aid of the beef cattle industry, or to prohibit the manufacture and sale of cement for the benefit of the lumber industry. In some cases a proper exercise of the police power results in advantage to a particular class of citizens and to the disadvantage of others. When that is the principal purpose of the measure, courts will look behind even the declared intent of legislatures, and relieve citizens against oppressive acts, where the primary purpose is not to the protection of the public health, safety, or morals. * * *

In this case, it is not shown that it is necessary, in order to protect the public health or prevent fraud, to prohibit the sale of oleomargarine. Chapter 279 is therefore a void enactment. * * *

Death certificate as evidence.—(Oklahoma Supreme Court; Oklahoma Aid Ass'n *v.* Thomas, 256 P. 719; decided April 19, 1927.) An action was brought to recover on a benefit certificate and the aid association sought to defend on the ground that the decedent had committed suicide, which fact, under the constitution and by-laws of the association, would make the certificate null and void. A certified copy of the death certificate pertaining to the decedent, which was introduced in evidence, gave the cause of death as gunshot wound and indicated that the case was one of suicide.

A State law provided as follows:

* * * Any such copy of the record of a birth or death, when properly certified by the State registrar, shall be prima facie evidence in all courts and places of the facts therein stated.

The supreme court decided that the trial court erred in admitting the death certificate in evidence as proof of who inflicted the wound. The following is quoted from the court's opinion:

It is our opinion that the legislature, when they inserted the words "(probably) accidental, suicidal, or homicidal," did not intend that said death certificate, when introduced in evidence, should be held to make out a prima facie case of homicide or suicide. * * *

It is our opinion that the legislature provided for the keeping of vital statistics in the exercise of its police power for the purpose of keeping an accurate record of births and deaths and of the diseases causing death, and so that the health authorities may be better enabled to combat diseases. The attending physician or coroner might be able to state the cause of death, just as was stated here, gunshot wound. But to go further and state by whom inflicted would change all the rules of evidence in cases in which this certificate could be admitted.

We agree with the defendant that the record of births and deaths, when properly kept as required by law and made a matter of public record by statutes, as such are admissible in evidence for certain purposes. But we can not agree that a certified copy thereof would be admissible for the purpose of showing who inflicted the gunshot wound. * * *

In this case there is no question but that the deceased died of gunshot wound. The certificate was not essential to establish the cause of death, but was offered by the defendant in an effort to prove suicide or who inflicted the mortal wound. * * *

Sewage pollution of stream by city.—(Connecticut Supreme Court of Errors; Donnelly Brick Co., Inc., *v.* City of New Britain, 137 A. 745; decided June 6, 1927.) In an action brought against the city of New Britain because of damage to plaintiff's property caused by the pollution of a brook and the overflow of its polluted waters, the supreme court of errors stated the applicable principles of law as follows:

The plaintiff was entitled, as a riparian owner, to have this brook flow through its land as it had been accustomed to flow, as a right inseparately annexed to its soil. Nolan *v.* New Britain, 69 Conn. 668, 681, 38 A. 703. The defendant city had no right to appreciably or materially pollute the brook and thus cause a nuisance and impair plaintiff's rights in it. Stamford Extract Mfg. Co. *v.* Stamford Rolling Mills Co., 101 Conn. 310, 322, 125 A. 623. "If a municipal corporation, in the absence of a legal right so to do, causes sewage to pollute a watercourse, to the use of which a lower owner, through whose premises the watercourse flows, is entitled, it is guilty of a nuisance, for which damages may be recovered." Nolan *v.* New Britain, supra, at page 678 (38 A. 706). * * * * * * The city could not support its pollution of this stream upon the ground of its public necessity. * * *

Section of labor law relating to laundries construed.—(New York Supreme Court; Van Zandt's, Inc., *v.* Department of Labor of State of New York et al., 222 N. Y. S. 450; decided June 11, 1927.) Section 296 of the labor law and rule 1700 of the industrial code provided, respectively, as follows:

SEC. 296. *Laundries.*—A shop, room, or building where one or more persons are employed in doing public laundry work by way of trade or for purposes of gain is a factory within the meaning of this chapter and subject to the provisions relating to factories. No such public laundry work shall be done in a room used for sleeping or living purposes. All such laundries shall be kept in a clean condition and free from vermin and from all impurities of an infectious or contagious nature. This section shall not apply to a female doing custom laundry work at her home for regular family trade.

Rule 1700. The term "laundry" shall mean an establishment wherein public laundry work is done by way of trade or for purposes of gain, and in which the washing, ironing, or other finishing of clothes or other textiles is accomplished by the use of power-driven machinery.

It was held that these provisions applied to a laundry operated by the plaintiff for the purpose of laundering new collars and shirts manufactured at its factory.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Critical and Experimental Studies of Pasteurization of Milk. (Kritische und Experimentelle Studien zur Pasteurisierung der Milch.) H. Brand. Thesis, Eidg. Tech. Hochsch., Zurich, 1925. 91 pages. From Experiment Station Record, United States Department of Agriculture, vol. 56, No. 5, April, 1927, p. 473.

"The first part of this publication deals with the purpose of Pasteurization, the resulting changes in the milk, and methods and regulations for Pasteurization in force in Europe and America. The second portion of the work deals with the efficiency of Pasteurization for destroying bacteria and prolonging the keeping qualities of cow's and human milk. The results of these studies showed that Pasteurization at 63° C. (145.4° F.) for 30 minutes killed all the pathogenic organisms but did not materially affect the keeping qualities. The findings were similar when human milk was Pasteurized."

Investigation of Current Relations in Agitator Flash Pasteurizers and Their Influence on the Death of Organisms. K. Richter and H. M. Wendt. (Milchw. Forsch., 3 (1926), No. 2–3, pp. 200–208.) From Experiment Station Record, United States Department of Agriculture, vol. 56, No. 5, April, 1927, p. 474.

"The amount of direct flow through two types of flash Pasteurizers was determined by first sending skim milk and then whole milk through the Pasteurizers. The length of time that different portions remained in the container was estimated from the fat content of the milk coming out.

"The results showed that in one type of Pasteurizer, which was cylindrical in shape, portions of the milk passed through in a few seconds while other portions remained for as long as 4 minutes. The top of the other type of Pasteurizer was larger in diameter than the bottom. The maximum and minimum time required for milk to go through this type was 70 and 15 seconds, respectively. In the latter type the destruction of *B. coli* was very complete."

Effect of Different Temperatures on the Bacterial Flora of Milk. Martin J. Prucha, Professor of Dairy Bacteriology, University of Illinois, Urbana. *American Journal of Public Health*, vol. 7, No. 4, April, 1927, pp. 356–359.

"The work was started about three years ago but is not yet completed. This paper is only a preliminary report.

"The problem has been attacked along two different lines. First, the effect of Pasteurization on the entire bacterial flora as found in the milk is being studied collectively. Samples of the raw milk are procured from different localities and during the different seasons of the year. These samples of milk are Pasteurized in the laboratory and the bacterial flora of the milk is studied before and also after the Pasteurization. The effect on the keeping quality of the milk is also observed. Second, the different bacterial species that are found in the milk are obtained in pure cultures and are then subjected to the Pasteurizing temperature.

"The results so far obtained correspond in general with the results of the previous investigators. The Pasteurization reduces the bacterial count in the milk in general about 99 per cent. However, under certain conditions the milk may become heavily contaminated with bacteria that are resistant to the Pasteurizing temperature. When that happens, the Pasteurized milk will have high bacterial counts.

"The flora usually consists of varying numbers of different species, each species varying in numbers from day to day.

"The various methods employed in connection with the milk production and the milk handling affect the number of bacteria and also affect the percentages of the different species. Not only the methods of operation but also the weather and the climatic temperatures will affect the bacterial flora of the milk.

"The source of these bacteria has not been fully demonstrated in all cases. There is some evidence that they come from the utensils. Incomplete steaming of the utensils causes some of these organisms to survive while those that are more sensitive to heat may be completely destroyed.

"The heat-resisting bacteria do not grow very fast in the milk when the milk is kept at lower temperatures. They do not seriously affect the keeping quality

of the milk when the milk is kept at 60° F. or lower. However, the high counts in freshly Pasteurized milk, whether the counts are due to the thermophiles or to the heat-resisting bacteria or to the spore-producing bacteria, should always be considered to indicate a neglect somewhere along the journey of the milk as it passes from the cow to the final container, the bottle."

The Treatment of Milk by an Electrical Method. Samuel C. Prescott. *American Journal of Public Health*, vol. 17, No. 3, March, 1927, pp. 221-223. (Abstract by Malcolm Lewis.)

Experiments in Great Britain by Professor Beattie and Sir Oliver Lodge in 1914 resulted, after some years, in a process by which milk, subjected to the action of electric current, was heated quickly, uniformly, and completely to accurately controlled temperatures. Brief treatments of only a fraction of a minute effectively destroyed such pathogens as tubercle, typhoid, and colon bacilli without noticeable change in the appearance or taste of the milk. Introduction into the United States resulted in changes of design, operation, and technical improvements tending toward simplified operation and automatic control.

The author's personal study of a commercial installation covered about a year. Milk was pumped through the apparatus at such speed that 220 volts alternating 60-cycle current raised the temperature to 158-160° F., and at that speed 12 seconds were required to pass the milk through the treating chamber. The results showed great uniformity of treatment, normal taste and cream volume, and excellent keeping quality. The reduction of bacteria was highly efficient. No colon nor tubercle bacilli were found among the surviving types

Sewage Treatment Experiments at Houston, Texas. W. S. Stanley. Proceedings of the Ninth Texas Water Works Short School, Texas Section, Southwest Water Works Association, pp. 288-292. (Abstract by Chester Cohen.)

The earliest sewage treatment experiments with activated sludge in Houston were begun about 1914 and have continued since that time. A number of the interesting fundamentals established through this work are given. It was proved that, when the quantity of air supplied was less than 0.2 cubic foot free air per square foot of water surface per minute there was a noticeable falling off in the results, and when the amount of air per square foot was in excess of 0.25 the improvement was not proportional to the quantity of air supplied. Tanks with a depth of less than 7½ feet, with ordinary agitation, would not give the best results. The problem of combating the clogging of the filtros plates, due to iron rust, was solved through the immersing of the plates for a few hours in a 10 per cent solution of hydrochloric acid. It is now believed that the use of concrete holders and dust removers for cleaning the air will give the plates a life of at least five years.

The lagooning of sludge (a form of separate sludge digestion) has not been altogether satisfactory. Methods of sludge dewatering were tried. In 1917 the old process of flotation was employed, embodying the use of soda ash and sulphuric acid with the application of heat to evolve CO_2. The best results were obtained with 105 pounds of soda ash and 268 pounds of sulphuric acid per ton of dry product with a temperature of 45° C. The resulting sludge, however, had about 97 per cent water, and obviously such a method was not practicable. In 1921 a dewatering plant was put into operation which consisted of three cyprus sludge settling tanks of 50,000 gallons capacity each, two plate and frame filter presses, and one direct indirect heat rotary dryer. This plant had a capacity of 10 tons of dry sludge per day. Attempts were made to filter the sludge directly as received from the aerating tanks and also after acidification with sulphuric acid and sulphur dioxide gas, the final cost of the product being as follows: Unconditioned sludge, $38.90; conditioned with sulphuric acid, $33.85; conditioned

with sulphur dioxide, $39.30. The high cost of operating the filter presses and the short life of the filter cloth has caused the abandonment of the process.

A standard wet machine such as used in the paper industry was installed, but cost of replacement of screens, loss of solids, and nonconsistent results caused the abandonment of this process. More recent experiments using a 4-foot American continuous vacuum filter with aluminum sulphate or ferric salts as conditioning reagents have been tried. Hydrogen ion concentration has been used as a guide for the conditioning process. The optimum pH for filtration with ferric chloride is about 5.4, and with alum sulphate about 4.8. It is expected to produce a sludge cake containing from 80 to 82 per cent moisture at a cost within economic limits and which can be further dried in the rotary dryer. Experiments in 1926 using a conditioning agent and running the sludge so treated on to drying beds for partial drying were not successful, due to climatic conditions and odors and other nuisances produced before the sludge had time to dry sufficiently to be removed from the beds. Other experiments to prevent the rising of sludge blankets in the settling tanks through the use of chlorine were tried. Experiments on the iron content of sludge have indicated that, so far as Houston conditions are concerned, the iron content has no effect on purification.

Experiments with very concentrated packing house waste indicate that surface aeration by mechanical apparatus is equal in cost of power to that of diffused air. Standard purification was accomplished by the first method in 36 hours, as compared to 12 hours with activated sludge. With normal domestic sewage, however, there may be attained a greater power economy using surface aeration.

Separate Sludge Digestion. Jerry Donohue. *The American City*, vol. 36, No. 5, pp. 633–636. (Abstract by D. W. Evans.)

The method of sewage disposal by separate sludge digestion is briefly discussed in this article, and the operation and construction features of two plants in Wisconsin are described.

The city of Hartford built a plant of this type in 1924, and it has given satisfactory service. Sewage first passes through a coarse bar screen and the screenings are removed to sludge bed. The screened sewage passes to the clarifier, where the suspended solids are removed. A Dorr mechanism is used for concentrating the sludge, and the thickened sludge is removed daily to a separate tank for digestion. The average detention period in the clarifier is 2¾ hours, and the time necessary for pumping sludge is 30 minutes daily.

The digestion tank has a capacity of 3 cubic feet per capita based on an ultimate population of 5,500. This tank is also equipped with a Dorr mechanism for breaking up the scum so that gases may escape. The incoming sludge is distributed evenly on the surface by means of a channel riding with the revolving mechanism.

Sludge is removed by static head to a concrete drying bed. The underdrainage system is of tile with brick covering. Over the brick are placed 18 inches of stone and 6 inches of sand. The area of the bed provides a capacity of 0.6 square feet per capita. Official tests conducted by the Wisconsin State Board of Health established the fact that the raw sewage was extremely strong for domestic sewage and that a removal of 73 per cent by weight of the suspended solids was accomplished. Sludge has been withdrawn five times without any complaints from adjacent landholders. The operating cost of this plant was $630 for 1925.

A similar installation was recently completed at the city of Antigo, except that provisions were made for securing better operation during cold weather by the addition of a cover for the digestion tank, a gas collector, and heating unit for the sludge. The gas is used as fuel for heating the plant and the sludge, and is

equivalent to 200 pounds of coal per day over a nine months' period. The gas maintains a temperature of 65° F. in the digestor.

The following advantages of separate sludge digestion are noted: The tanks are shallow and cheaper to build than two-story tanks; the mechanism employed in the tank takes the place of hand work; the type of plant is flexible, and the capacity of either tank can be enlarged without necessity of enlarging both; the elevation of sludge in the digestor permits gravity distribution to drying beds; the collection of gas which, when burned, eliminates odors and conserves fuel in the plant; this type removes the solids as much as others; the mechanical features need supervision and better efficiency is secured than a nonmechanical plant in which supervision is often neglected.

A Simple and Successful Septic Tank. E. J. Van Meerten, Lecturer in Engineering, Grootfontein School of Agriculture, Middleburg, Cape. Bulletin No. 15, Union of South Africa Department of Agriculture. 12 pages. (Abstract by W. A. Hardenbergh.)

The tank described as being best suited for private dwellings in South Africa is large compared with our standards, having a capacity of about 1,260 gallons. It is of the 3-compartment type, connection between the compartments being by means of a drop pipe 5 feet 4 inches long reaching within 6 or 8 inches of the tank bottom. Disposal of the effluent is through a stone-filled well reaching to a trench drain. The estimated cost, including a "convenience" (toilet) is £60 (about $295). Users are cautioned against discharging wash or bath water or kitchen slops into the tank. Doubt is expressed as to the workability of the tank in tight soil.

Abstractor's note: Tanks much smaller than this give excellent results in the United States. Tight soil requires more careful installation, but does not preclude satisfactory use. The very long drop pipe is not satisfactory in this country, 18 inches having been found best.

Sewer Plant Pays Dividends. R. E. McDonnel. *Western Construction News*, vol. 2, No. 8, April 25, 1927, pp. 42-43. (Abstract by E. A. Reinke.)

The author discusses the advantage of sewers under the headings, "Benefits of water works made available," "Sewers an inducement to factories," "Cost less than cesspools and privies," "Sewers enhance property values," and "No community can afford to be without sewers." He states that an average of 132 cities show sewers to cost about one-half as much as the waterworks. He concludes with the statement, "After 25 years of experience in sanitary engineering work the writer can unhesitatingly say that no improvement will pay better dividends than the installation of a modern system of sanitary sewers; and when once properly installed, it is self-cleansing, and as lasting as time itself. No community can afford to be without this improvement."

REPORT OF THE UNITED STATES PUBLIC HEALTH SERVICE ON THE MONTREAL TYPHOID-FEVER SITUATION—CORRECTION

In the report on the typhoid-fever situation in Montreal, Canada, published in Public Health Reports for July 22, 1927, the second sentence in the second paragraph on page 1895 should read, "Exactly where" etc., instead of "Exactly when" etc.

DEATHS DURING WEEK ENDED JULY 30, 1927

Summary of information received by telegraph from industrial insurance companies for week ended July 30, 1927, and corresponding week of 1926. (From the Weekly Health Index, Aug. 3, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended July 30, 1927	Corresponding week 1926
Policies in force	67, 800, 438	65, 046, 262
Number of death claims	11, 794	11, 393
Death claims per 1,000 policies in force, annual rate	9.1	9.1

Deaths from all causes in certain large cities of the United States during the week ended July 30, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, Aug. 3, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended July 30, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended July 30, 1927 [2]
	Total deaths	Death rate [1]		Week ended July 30, 1927	Corresponding week 1926	
Total (64 cities)	5,771	10 5	[3] 10 9	632	[3] 668	[4] 53
Akron	34			5	3	54
Albany [5]	39	16 9	11.4	4	1	83
Atlanta	73			11	9	
White	38			5	5	
Colored	35	(6)		6	4	
Baltimore [5]	174	11.1	14 5	22	24	68
White	132		12.3	13	14	50
Colored	42	(6)	27.2	9	10	140
Birmingham	64	15 5	13.8	9	6	
White	23		9.8	1	2	
Colored	41	(6)	20.1	8	4	
Boston	207	13.6	13 0	27	26	75
Bridgeport	24			2	2	37
Buffalo	90	8.5	12 0	9	15	38
Cambridge	26	10 9	9.8	4	4	71
Camden	20	7.8	13 9	7	9	120
Canton	27	12 5	8.5	3	2	71
Chicago [5]	584	9 8	9.2	66	48	57
Cincinnati	114	14.4	16.2	16	16	100
Cleveland	159	8.4	8.0	8	22	21
Columbus	69	12.4	15.4	10	8	93
Dallas	34	8.5	14.4	7	14	
White	26		12.7	6	12	
Colored	8	(6)	25.1	1	2	
Dayton	40	11.6	13.0	6	3	99
Denver	67	12.0	11.9	7	5	
Des Moines	26	9.1	10.4	2	3	33
Detroit	230	9.0	8.6	32	26	51
Duluth	19	8.6	6.9	2	0	43
El Paso	27	12.3	17.2	3	12	
Erie	18			2	5	39
Fall River [5]	25	9.8	9.2	2	2	35
Flint	18	6.6	5.0	5	1	82
Fort Worth	29	9.2	7.2	2	2	
White	23		6.7	2	2	
Colored	6	(6)	11.0	0	0	
Grand Rapids	38	12 5	9.4	0	6	0
Houston	45			4	1	
White	31			3	1	
Colored	14	(6)		1	0	
Indianapolis	104	14.5	13.2	9	11	71
White	82		12.1	9	6	81
Colored	22	(6)	21.3	0	5	0
Jersey City	54	8.7	8.5	6	3	45
Knoxville	33	16.9		4		
White	31			3		
Colored	2	(6)		1		

See footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended July 30, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926—Continued

City	Week ended July 30, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended July 30, 1927 [2]
	Total deaths	Death rate [1]		Week ended July 30, 1927	Corresponding week 1926	
Los Angeles	235			32	22	92
Louisville	72	11.7	15.6	7	13	60
White	53		13.2	5	10	49
Colored	19	(6)	28.8	2	3	140
Lowell	29	13.7	10.4	4	1	77
Lynn	23	11.4	4.0	1	1	26
Memphis	70	20.4	16.8	9	9	
White	31		13.7	5	3	
Colored	39	(6)	22.3	4	6	
Milwaukee	93	9.1	10.3	12	22	56
Minneapolis	88	10.4	10.6	8	9	45
Nashville [5]	58	21.9	24.4	6	8	
White	36		18.6	4	2	
Colored	22	(6)	38.8	2	6	
New Bedford	19	8.3	9.2	5	5	87
New Haven	34	9.6	9.2	3	3	42
New Orleans	129	15.9	15.1	21	13	
White	69		10.6	7	4	
Colored	60	(6)	27.7	14	9	
New York	1,151	10.0	10.2	120	119	50
Bronx Borough	126	7.1	9.3	4	12	13
Brooklyn Borough	387	8.9	8.3	56	44	58
Manhattan Borough	487	14.0	13.7	47	54	55
Queens Borough	104	6.7	6.7	8	6	34
Richmond Borough	47	16.7	16.4	5	3	93
Newark, N. J.	69	7.7	8.7	5	9	25
Oklahoma City	28			7	2	
Omaha	32	7.6	13.0	3	3	33
Paterson	39	14.1	8.4	1	1	18
Philadelphia	364	9.3	12.0	35	47	47
Pittsburgh	127	10.3	11.3	14	15	49
Portland, Oreg.	86			6	3	68
Providence	43	8.0	10.2	7	8	59
Richmond	47	12.8	11.6	4	13	53
White	22		9.3	0	4	0
Colored	25	(6)	17.1	4	9	152
Rochester	62	10.0	10.2	4	7	34
St. Louis	195	12.1	13.1	19	23	
St. Paul	42	8.8	7.8	4	1	36
Salt Lake City [5]	34	13.0	5.9	5	1	76
San Antonio	58	14.3	16.3	9	16	
San Diego	38	17.2	14.2	2	2	43
San Francisco	120	10.9	10.2	7	8	44
Schenectady	9	5.0	4.5	1	0	30
Seattle	68			3	3	31
Somerville	16	8.2	8.9	1	2	36
Spokane	23	11.0	15.8	2	3	50
Springfield, Mass	25	8.9	11.9	1	3	15
Syracuse	39	10.3	10.1	7	2	90
Tacoma	24	11.7	10.3	1	1	24
Toledo	34	5.8	12.0	7	5	67
Trenton	28	10.7	14.0	3	2	52
Washington, D. C.	126	12.2	8.3	10	10	58
White	77		7.1	7	6	59
Colored	49	(6)	11.7	3	4	55
Waterbury	17			2	2	47
Wilmington, Del	14	5.8	10.1	3	4	74
Worcester	36	9.6	12.4	6	2	72
Yonkers	12	5.3	6.7	2	2	45
Youngstown	32	9.9	8.2	1	6	14

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 63 cities.
[4] Data for 60 cities.
[5] Deaths for week ended Friday, July 29, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta 31, Baltimore 15, Birmingham 39, Dallas 15, Fort Worth 14, Houston 25, Indianapolis 11, Knoxville 15, Louisville 17, Memphis 38, Nashville 30, New Orleans 26, Richmond 32, and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended August 6, 1927

DIPHTHERIA

	Cases
Alabama	17
Arizona	1
Arkansas	4
California	72
Colorado	13
Connecticut	17
Florida	4
Georgia	16
Illinois	59
Indiana	20
Iowa [1]	15
Kansas	4
Louisiana	18
Maryland [1]	17
Massachusetts	43
Michigan	33
Minnesota	14
Mississippi	7
Missouri	14
Montana	3
Nebraska	1
New Jersey	61
New Mexico	12
New York [2]	39
North Carolina	34
Oklahoma [3]	12
Oregon	6
Pennsylvania	121
Rhode Island	3
South Carolina	29
South Dakota	2
Tennessee	9
Texas	23
Utah [1]	6
Washington	10
West Virginia	9
Wisconsin	35
Wyoming	1

INFLUENZA

	Cases
Alabama	7
California	2
Connecticut	1
Florida	8
Georgia	24
Illinois	1
Indiana	3
Kansas	8
Louisiana	1
Maine	1
Maryland [1]	3
Massachusetts	2
Michigan	2
Missouri	2
New Jersey	1
Oklahoma [3]	7
Oregon	2
South Carolina	119
Tennessee	4
Texas	35
Wisconsin	7

MEASLES

Alabama	32
Arizona	2
Arkansas	14
California	58
Colorado	16
Connecticut	19
Florida	3
Georgia	7
Illinois	38
Indiana	10
Iowa [1]	5
Kansas	37
Louisiana	5
Maine	14
Maryland [1]	11

[1] Week ended Friday.
[2] Exclusive of New York City and Rochester.
[3] Exclusive of Oklahoma City and Tulsa.

MEASLES—continued

	Cases
Massachusetts	85
Michigan	39
Minnesota	8
Missouri	11
Montana	3
Nebraska	35
New Jersey	4
New Mexico	14
New York [2]	117
North Carolina	130
Oklahoma [3]	53
Oregon	6
Pennsylvania	140
South Carolina	84
South Dakota	21
Tennessee	13
Texas	14
Utah [1]	1
Vermont	24
Washington	75
West Virginia	23
Wisconsin	116
Wyoming	4

MENINGOCOCCUS MENINGITIS

	Cases
California	6
Colorado	1
Georgia	1
Illinois	8
Iowa [1]	1
Kansas	3
Louisiana	1
Michigan	1
Minnesota	2
Missouri	1
Montana	2
New Jersey	1
New York [2]	1
North Carolina	2
Oklahoma [3]	1
Pennsylvania	3
Tennessee	1
Texas	1
Washington	1
Wisconsin	10

POLIOMYELITIS

	Cases
Arkansas	1
California	56
Connecticut	11
Georgia	1
Illinois	6
Indiana	2
Kansas	4
Louisiana	3
Massachusetts	10
Michigan	3
Minnesota	1
Missouri	15
Montana	1
New Jersey	17
New Mexico	9
New York [1]	6
Oklahoma [3]	8

POLIOMYELITIS—continued

	Cases
Oregon	2
Pennsylvania	5
South Carolina	2
Tennessee	1
Texas	10
Utah [1]	1
Virginia	2
Wisconsin	2
Wyoming	1

SCARLET FEVER

	Cases
Alabama	15
Arizona	1
Arkansas	1
California	68
Colorado	20
Connecticut	10
Florida	3
Georgia	13
Idaho	1
Illinois	72
Indiana	18
Iowa [1]	13
Kansas	27
Louisiana	5
Maine	13
Maryland [1]	13
Massachusetts	82
Michigan	77
Minnesota	32
Mississippi	1
Missouri	22
Montana	14
Nebraska	9
New Jersey	31
New Mexico	12
New York [2]	73
North Carolina	16
Oklahoma [3]	7
Oregon	7
Pennsylvania	112
Rhode Island	9
South Carolina	14
South Dakota	14
Tennessee	15
Texas	11
Utah [1]	8
Vermont	4
Washington	18
West Virginia	15
Wisconsin	44
Wyoming	2

SMALLPOX

	Cases
Alabama	4
Arkansas	2
California	6
Colorado	2
Georgia	1
Idaho	2
Illinois	9
Indiana	28
Iowa [1]	10
Kansas	6

[1] Week ended Friday.
[2] Exclusive of New York City and Rochester.
[3] Exclusive of Oklahoma City and Tulsa.

SMALLPOX—continued	Cases
Michigan	15
Mississippi	2
Montana	3
Nebraska	5
New York [2]	3
North Carolina	13
Oklahoma [3]	7
Oregon	5
Pennsylvania	1
South Carolina	10
South Dakota	6
Tennessee	3
Texas	10
Utah [1]	1
Virginia	2
Washington	16
West Virginia	8
Wisconsin	18
Wyoming	1

TYPHOID FEVER	Cases
Alabama	92
Arizona	1
Arkansas	48
California	12
Colorado	6
Connecticut	1
Delaware	1
Florida	9
Georgia	93
Idaho	4
Illinois	37
Indiana	12
Iowa [1]	1
Kansas	21
Louisiana	26
Maine	1
Maryland [1]	24
Massachusetts	3
Michigan	9
Minnesota	9
Mississippi	20
Missouri	13
Montana	7
Nebraska	1
New Jersey	12
New Mexico	8
New York [2]	12
North Carolina	70
Oklahoma [3]	96
Oregon	4
Pennsylvania	52
Rhode Island	4
South Carolina	89
Tennessee	141
Texas	28
Utah [1]	3
Vermont	1
Washington	4
West Virginia	30
Wisconsin	6

[1] Week ended Friday.
[2] Exclusive of New York City and Rochester
[3] Exclusive of Oklahoma City and Tulsa.

Reports for Week Ended July 30, 1927

DIPHTHERIA	Cases
District of Columbia	18
MEASLES	
District of Columbia	1
North Dakota	3
MENINGOCOCCUS MENINGITIS	
North Dakota	1
SCARLET FEVER	
District of Columbia	9
North Dakota	11
SMALLPOX	
North Dakota	1
TYPHOID FEVER	
District of Columbia	3
North Dakota	1

POLIOMYELITIS IN OHIO

The State Health Department of Ohio reports that 16 cases of poliomyelitis occurred in Martins Ferry, Ohio, up to August 5, 1927. Three cases occurred outside the city. Eight cases and one death were reported in Dennison and Uhrichsville, Tuscarawas County. Nine other cases were reported in the State, widely separated.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week.

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
June, 1927										
California	26	511	61	3	2,966	3	75	672	79	62
Missouri	4	106	1	11	487		0	175	95	38
New Hampshire	1	2	73				0	34	0	3
South Dakota	0	13	3	1	142		0	73	25	10
Virginia	2	56	500	141	1,249	63	6	82	54	111
Wisconsin	35	113	85		2,473		3	422	73	14

June, 1927

	Cases
Botulism:	
California	3
Chicken pox.	
California	1,222
Missouri	94
South Dakota	19
Virginia	328
Wisconsin	775
Dysentery.	
California (amebic)	6
California (bacillary)	8
Virginia	834
German measles:	
California	306
Wisconsin	122
Hookworm disease:	
California	2
Virginia	12
Jaundice (epidemic):	
California	3
Leprosy	
California	5
Missouri	1
Lethargic encephalitis:	
California	6
Wisconsin	1
Malta fever.	
California	1

June, 1927—Continued

	Cases
Mumps	
California	715
Missouri	294
South Dakota	2
Wisconsin	786
Opthalmia neonatorum:	
California	2
Missouri	5
Paratyphoid fever:	
California	4
Rabies in animals.	
California	37
Missouri	1
Septic sore throat.	
Missouri	5
Tetanus	
California	8
Trachoma:	
California	13
Missouri	3
South Dakota	3
Whooping cough:	
California	914
Missouri	330
South Dakota	21
Virginia	1,331
Wisconsin	393

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 99 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,750,000. The estimated population of the 94 cities reporting deaths is more than 30,000,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended July 23, 1927, and July 24, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
41 States	1,014	952	
99 cities	546	525	540
Measles:			
40 States	2,218	3,630	
99 cities	640	954	
Poliomyelitis:			
43 States	146	49	
Scarlet fever:			
41 States	1,164	1,301	
99 cities	380	472	295
Smallpox:			
42 States	303	216	
99 cities	61	33	54
Typhoid fever:			
41 States	962	822	
99 cities	114	102	153
Deaths reported			
Influenza and pneumonia:			
94 cities	341	327	

City reports for week ended July 23, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics, or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	1	1	2	0	0	0	0	1
New Hampshire:									
Concord	22,546	0	0	0	0	0	1	0	1
Manchester	83,097	0	1	0	0	0	0	0	1
Vermont:									
Barre	10,008	0	0	0	0	0	0	0	0
Burlington	24,089	0	0	0	0	0	2	0	2
Massachusetts:									
Boston	779,620	45	35	17	1	0	63	10	11
Fall River	128,993	4	2	0	0	0	5	0	1
Springfield	142,065	7	1	2	0	0	3	2	1
Worcester	190,757	8	2	1	0	0	2	0	4
Rhode Island:									
Pawtucket	69,760	0	0	1	0	0	0	0	1
Providence	267,918	0	3	2	0	0	1	0	1
Connecticut:									
Bridgeport	(1)	0	4	1	1	0	0	0	1
Hartford	160,197	3	2	1	0	0	0	3	0
New Haven	178,927	1	1	0	0	0	10	0	2

[1] No estimate made.

City reports for week ended July 23, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria: Cases, estimated expectancy	Diphtheria: Cases reported	Influenza: Cases reported	Influenza: Deaths reported	Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	8	8	4		0	3	6	4
New York	5,873,356	112	135	143	4	4	33	46	74
Rochester	316,786	7	4	2		0	0	4	0
Syracuse	182,003	9	3	2		0	48	1	1
New Jersey:									
Camden	128,642	1	2	4	0	0	0	3	1
Newark	452,513	27	7	11	0	0	4	15	6
Trenton	132,020	1	2	0	0	0	0	0	2
Pennsylvania:									
Philadelphia	1,979,364	51	40	29		2	19	31	21
Pittsburgh	631,563	26	12	17		2	70	1	10
Reading	112,707	1	2	2			10	4	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	3	5	8	0	0	3	0	13
Cleveland	936,485	37	17	34	0	0	3	32	13
Columbus	279,836	2	2	6	0	1	0	0	3
Toledo	287,380	8	3	3	0	0	12	1	1
Indiana:									
Fort Wayne	97,846	1	1	1	0	0	1	0	0
Indianapolis	358,819	4	3	5	0	0	4	9	5
South Bend	80,091	0	0	0	0	0	1	0	0
Terre Haute	71,071	0	0	0	0	0	2	1	2
Illinois:									
Chicago	2,995,239	36	54	72	2	1	29	20	27
Springfield	63,923	1	0	0	1	0	1	0	1
Michigan:									
Detroit	1,245,824	33	32	23	1	1	2	7	9
Flint	130,316	4	2	5	0	0	1	0	3
Grand Rapids	153,698	1	2	0	0	0	26	2	0
Wisconsin:									
Kenosha	50,891	1	1	0	0	0	1	3	2
Madison	46,385	6	0	0	0	0	2	0	0
Milwaukee	509,192	22	9	7	3	0	61	20	4
Racine	67,707	1	1	0	0	0	0	1	0
Superior	39,671	0	1	1	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	0	1	0	0	0	0	0	0
Minneapolis	425,435	34	10	7	0	0	1	0	3
St. Paul	246,001	7	9	2	0	0	9	0	0
Iowa:									
Des Moines	141,441	0	2	0	0	0	0	0	0
Sioux City	76,411	0	1	0	0		0	1	
Waterloo	36,771	0	0	0	0		1	0	
Missouri:									
Kansas City	367,481	2	2	3	0	1	1	2	7
St. Joseph	78,342	0	0	1	0	0	0	0	0
St. Louis	821,543	5	18	10	0	0	4	10	
North Dakota:									
Fargo	26,403	0	0	0	0	0	0	0	0
Grand Forks	14,811	0	0	0	0		0	0	
South Dakota:									
Aberdeen	15,036	4	0	0	0		0	0	
Nebraska:									
Lincoln	60,941	0	0	0	0	0	1	6	1
Omaha	211,768	0	4	4	0	0	2	0	0
Kansas:									
Topeka	55,411	0	1	0	0	0	4	2	0
Wichita	88,367	0	0	0	0	0	2	0	0
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	0	0	1	0	0	0	0	1
Maryland:									
Baltimore	796,296	22	11	28	1	0	3	4	11
Cumberland	33,741	0	0	0	0	0	0	0	0
Frederick	12,035	0	0	1	0	0	0	0	0

City reports for week ended July 23, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
SOUTH ATLANTIC—con.									
District of Columbia:									
Washington	497,906	3	4	7	0	0	3	0	6
Virginia:									
Lynchburg	30,395	3	0	2	0	0	0	0	0
Norfolk	(1)		0						
Richmond	186,403	0	2	1	0	0	4	1	3
Roanoke	58,208	1	1	0	0	0	0	0	1
West Virginia:									
Charleston	49,019	0	1	1	1	1	1	0	1
Wheeling	56,208	0	0	0	0	0	1	0	1
North Carolina:									
Raleigh	30,371	0	0	0	0	0	7	0	1
Wilmington	37,061	0	0	0	0	0	14	0	0
Winston-Salem	69,031	0	0	0	0	0	13	3	3
South Carolina:									
Charleston	73,125	0	0	0	6	0	0	0	1
Columbia	41,225	1	0	0	0		20	1	
Greenville	27,311	0	0	0	0	0	1	1	1
Georgia:									
Atlanta	(1)	1	2	2	10	0	2	1	4
Brunswick	16,809	0	0	0	0	0	0	2	0
Savannah	93,134	1	1	1	1	0	1	0	2
Florida:									
Miami	69,754	1		3	0	0	3	2	4
St. Petersburg	26,847	0	0	0	0	0	0	0	0
Tampa	94,743	0	0	1	0	0	3	0	2
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	1	1	0	0	0	1	0
Louisville	305,935	1	1	0	1	1	0	2	2
Tennessee:									
Memphis	174,533	0	1	1	0	2	1	0	0
Nashville	136,220	1	0	1	0	0	0	0	1
Alabama:									
Birmingham	205,670	9	1	2	0	0	3	0	6
Mobile	65,955	0	0	0	0	0	0	0	0
Montgomery	46,481	0	0	0	0	0	1	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643		0						
Little Rock	74,216	1	0	0	0	0	3	0	0
Louisiana:									
New Orleans	414,493	0	4	9	0	0	8	0	7
Shreveport	57,857	0	1	0	0	0	4	1	2
Oklahoma:									
Oklahoma City	(1)	0	0	1	0	0	1	0	4
Tulsa	124,478	0	1	1	0	0	0	0	0
Texas:									
Dallas	194,450	0	2	3	0	0	2	0	1
Galveston	48,375	0	0	1	0	0	0	0	0
Houston	164,954	0	2	12	0	0	1	0	1
San Antonio	198,069	0	1	5	0	0	0	0	4
MOUNTAIN									
Montana:									
Billings	17,971	2	0	0	0	0	1	0	0
Great Falls	29,883	2	1	0	0	0	3	0	0
Helena	12,037	0	0	0	0	0	0	0	0
Missoula	12,668	1	0	0	0	0	0	0	1
Idaho:									
Boise	28,042	0	0	1	0	0	0	1	0
Colorado:									
Denver	280,911	5	8	10		1	5	6	4
Pueblo	43,787	0	1	0	0	0	0	0	0
New Mexico:									
Albuquerque	21,000	0	1	0	0	0	1	1	2
Utah:									
Salt Lake City	130,948	10	2	0	0	0	2	1	0
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	0

[1] No estimate made.

City reports for week ended July 23, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria: Cases, estimated expectancy	Diphtheria: Cases reported	Influenza: Cases reported	Influenza: Deaths reported	Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
PACIFIC									
Washington									
Seattle	(1)	4	4	1			72	5	
Spokane	108,897	9	0	0			0	0	
Tacoma	104,455	7	2	2	0	0	4	0	1
California:									
Los Angeles	(1)	16	32	16	3	1	19	5	16
Sacramento	72,260	2	2	3	0	0	2	0	1
San Francisco	557,530	3	10	3	1	0	10	9	3

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
NEW ENGLAND											
Maine:											
Portland	0	0	0	0	0	2	0	0	0	1	26
New Hampshire:											
Concord	0	0	0	0	0	2	0	0	0	0	10
Manchester	0	0	0	0	0	1	0	0	0	0	15
Vermont:											
Barre	0	0	0	0	0	1	0	0	0	0	1
Burlington	0	0	0	0	0	0	0	0	0	0	3
Massachusetts:											
Boston	18	28	0	0	0	18	2	2	0	26	151
Fall River	1	2	0	0	0	2	1	0	0	1	23
Springfield	1	1	0	0	0	2	0	0	0	1	29
Worcester	2	3	0	0	0	4	0	5	1	11	52
Rhode Island:											
Pawtucket	0	1	0	0	0	1	0	0	0	0	21
Providence	2	7	0	0	0	1	1	0	0	0	49
Connecticut:											
Bridgeport	2	1	0	0	0	1	0	0	1	0	31
Hartford	1	0	0	0	0	0	1	0	0	5	40
New Haven	1	0	0	0	0	1	1	0	0	0	34
MIDDLE ATLANTIC											
New York:											
Buffalo	7	8	0	0	0	9	0	0	0	14	107
New York	41	45	0	0	0	[2] 83	25	12	5	148	1,151
Rochester	3	6	0	0	0	3	0	0	0	1	51
Syracuse	2	0	0	0	0	1	0	0	0	0	38
New Jersey:											
Camden	1	1	0	0	0	1	0	0	0	0	31
Newark	6	5	0	0	0	4	1	0	0	50	74
Trenton	0	1	1	0	0	2	0	1	0	0	33
Pennsylvania:											
Philadelphia	24	24	1	0	0	29	8	3	1	34	454
Pittsburgh	10	11	0	0	0	3	2	1	0	18	102
Reading	0	0	0	0	0	1	0	0	0	6	16
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	4	3	1	1	0	11	2	1	0	10	130
Cleveland	13	5	2	0	0	16	2	2	0	51	163
Columbus	2	1	0	1	0	4	1	0	0	9	76
Toledo	3	1	1	0	0	2	1	5	0	27	52
Indiana:											
Fort Wayne	1	1	0	1	0	0	1	1	0	4	21
Indianapolis	2	3	1	7	0	9	1	0	0	5	85
South Bend	0	1	1	0	0	1	0	0	0	5	16
Terre Haute	1	1	0	0	0	1	0	1	0	1	11

[1] No estimate made.

[2] Pulmonary tuberculosis only.

City reports for week ended July 23, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
EAST NORTH CENTRAL—con.											
Illinois:											
Chicago	29	52	1	0	0	35	5	5	0	164	534
Springfield	0	0	1	2	0	0	0	0	0	0	18
Michigan:											
Detroit	26	23	3	5	0	22	5	3	0	145	194
Flint	2	6	1	0	0	2	0	0	0	6	21
Grand Rapids	3	2	0	1	0	0	0	0	0	1	25
Wisconsin:											
Kenosha	1	2	1	0	0	1	0	0	0	1	5
Madison	1	2	0	0	0	1	0	0	0	6	22
Milwaukee	9	8	1	1	0	4	0	0	0	34	84
Racine	2	1	0	0	0	2	0	0	0	2	17
Superior	1	3	1	0	0	0	0	0	0	0	7
WEST NORTH CENTRAL											
Minnesota:											
Duluth	3	4	1	0	0	2	1	0	0	2	21
Minneapolis	10	10	3	0	0	3	1	0	0	4	71
St. Paul	6	11	2	0	0	0	1	0	0	6	45
Iowa:											
Des Moines	1	1	0	2	0	2	0	0	0	0	34
Sioux City	0	1	0	1	....	....	0	2	....	9	....
Waterloo	1	1	0	0	....	....	0	0	....	4	....
Missouri:											
Kansas City	2	0	1	0	0	9	2	1	0	17	83
St. Joseph	0	1	0	4	1	0	1	0	0	5	9
St. Louis	6	4	1	1	0	8	7	2	1	45	193
North Dakota:											
Fargo	0	7	1	0	0	1	0	0	0	0	5
Grand Forks	0	4	0	0	....	....	0	0	....	0	....
South Dakota:											
Aberdeen	1	0	0	0	....	....	0	0	....	2	....
Nebraska:											
Lincoln	0	0	0	1	0	1	1	1	0	4	9
Omaha	1	0	2	0	0	3	0	0	0	1	50
Kansas:											
Topeka	1	1	1	0	0	1	0	2	0	24	7
Wichita	1	0	0	0	0	2	1	0	0	20	31
SOUTH ATLANTIC											
Delaware:											
Wilmington	0	1	0	0	0	3	1	0	0	2	29
Maryland:											
Baltimore	6	8	0	0	0	22	7	3	0	62	189
Cumberland	0	0	0	0	0	0	1	0	0	0	17
Frederick	0	0	0	0	0	0	0	0	0	0	7
District of Col.:											
Washington	4	5	0	1	0	10	4	5	1	4	124
Virginia:											
Lynchburg	0	0	0	0	0	0	1	4	0	5	7
Norfolk	0	....	0	....	....	....	2	....	....	....	....
Richmond	1	2	0	0	0	5	2	0	0	6	56
Roanoke	1	2	1	0	0	0	1	0	0	1	19
West Virginia:											
Charleston	0	0	0	1	0	1	1	0	0	2	20
Wheeling	0	0	0	0	0	0	0	0	0	0	14
North Carolina:											
Raleigh	0	0	0	0	0	1	1	1	0	6	21
Wilmington	0	0	0	0	0	0	0	0	0	0	10
Winston-Salem	1	1	1	0	0	0	2	5	1	12	26
South Carolina:											
Charleston	0	0	0	1	0	2	2	0	0	....	20
Columbia	0	0	0	0	0	0	1	1	0	11	12
Greenville	0	0	1	0	0	0	1	0	0	1	5
Georgia:											
Atlanta	1	2	2	3	0	5	3	7	0	5	59
Brunswick	0	0	0	0	0	0	0	0	0	0	1
Savannah	0	0	0	0	0	0	2	0	0	0	28

City reports for week ended July 23, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
SOUTH ATLANTIC—continued											
Florida:											
Miami	1	0	0	0	0	2	------	1	1	0	37
St. Petersburg	0	0	0	0	0	0	0	0	0	0	10
Tampa	0	0	0	0	0	1	1	0	0	0	35
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0	2	0	0	0	1	1	0	0	0	16
Louisville	1	1	0	0	0	5	5	2	0	1	81
Tennessee:											
Memphis	0	3	0	4	0	10	6	8	2	2	64
Nashville	0	0	0	0	0	0	6	7	0	2	44
Alabama:											
Birmingham	1	0	1	3	0	2	5	4	1	8	59
Mobile	0	0	0	0	0	0	2	1	0	0	16
Montgomery	0	0	0	0	0	0	2	2	0	0	------
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	0	------	0	------	------	------	0	------	------	------	------
Little Rock	0	0	0	0	0	7	3	0	0	0	10
Louisiana:											
New Orleans	1	5	0	0	0	6	4	6	2	9	133
Shreveport	0	0	0	0	0	3	0	3	0	0	32
Oklahoma:											
Oklahoma City	0	0	1	0	0	2	2	2	0	0	40
Tulsa	1	0	0	0	------	------	1	0	------	0	------
Texas:											
Dallas	1	1	1	0	0	3	3	1	1	4	------
Galveston	0	1	0	0	0	0	0	0	2	0	8
Houston	0	4	1	2	0	4	2	0	0	0	70
San Antonio	1	0	0	0	0	5	1	1	1	0	70
MOUNTAIN											
Montana:											
Billings	0	0	0	1	0	0	1	0	0	12	7
Great Falls	0	2	1	0	0	0	0	0	0	0	5
Helena	0	0	0	0	0	0	0	0	0	0	4
Missoula	1	2	1	0	0	0	0	0	0	2	5
Idaho:											
Boise	0	0	1	1	0	0	0	0	0	2	5
Colorado:											
Denver	5	0	2	1	0	8	1	2	0	7	53
Pueblo	1	5	0	0	0	0	0	0	0	0	7
New Mexico:											
Albuquerque	0	0	0	0	0	0	0	0	0	0	16
Utah:											
Salt Lake City	1	2	0	10	0	0	0	1	0	18	30
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	5
PACIFIC											
Washington:											
Seattle	4	3	3	1	------	------	0	1	------	11	------
Spokane	1	4	3	7	------	------	0	0	------	4	------
Tacoma	1	1	2	0	0	0	0	1	0	0	18
California:											
Los Angeles	8	21	4	0	0	21	4	2	0	15	253
Sacramento	1	0	0	0	0	2	2	1	1	4	23
San Francisco	4	6	1	0	0	12	1	1	0	16	156

City reports for week ended July 23, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Boston	2	0	0	0	0	0	0	3	0
MIDDLE ATLANTIC									
New York.									
New York	2	2	7	4	0	0	3	5	1
Pennsylvania									
Philadelphia	0	0	1	1	0	0	1	2	0
Pittsburgh	0	0	0	0	0	0	1	1	1
EAST NORTH CENTRAL									
Ohio									
Cleveland	1	1	0	0	0	0	1	0	0
Columbus	1	1	0	1	0	0	0	0	0
Illinois									
Chicago	5	3	2	0	0	0	2	5	1
Michigan.									
Detroit	5	1	2	0	0	0	0	0	0
Wisconsin									
Milwaukee	4	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	1	0	0	0	0	0	0	0	0
Minneapolis	3	0	0	1	0	0	0	0	0
Missouri									
Kansas City	0	0	0	0	0	0	0	1	0
SOUTH ATLANTIC									
Maryland									
Baltimore	0	0	0	0	1	0	1	0	0
District of Columbia									
Washington	0	1	0	1	0	0	0	0	0
Virginia									
Richmond	0	0	0	0	0	1	0	0	0
North Carolina									
Winston-Salem	0	0	0	0	0	1	0	0	0
South Carolina									
Charleston [1]	0	0	0	0	2	0	0	1	0
Georgia									
Atlanta	0	0	0	0	1	0	0	2	0
Savannah [1] [2]	0	0	0	0	1	1	0	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Louisville	0	0	0	0	0	0	0	1	0
Alabama.									
Birmingham	0	0	0	1	0	0	1	0	0
Mobile [2]	0	0	0	0	0	1	0	0	0
Montgomery	0	0	0	0	3	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	2	0	0	0
Louisiana									
New Orleans	0	0	1	1	3	1	0	4	0
Shreveport	0	0	0	0	0	2	0	0	0
Oklahoma:									
Oklahoma City	0	0	0	0	1	0	0	0	0
Texas									
Dallas	0	0	0	0	1	0	1	2	2
Houston	1	1	0	0	0	0	0	0	0
MOUNTAIN									
Montana:									
Missoula	1	1	0	0	0	0	0	0	0

[1] Dengue: Charleston, S. C., 3 cases; Savannah, Ga., 1 case.
[2] Typhus fever: Savannah, Ga., 2 cases; Tampa, Fla., 1 case; Mobile, Ala., 1 death.

City reports for week ended July 23, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
PACIFIC									
Washington									
Tacoma	0	1	0	0	0	0	0	0	0
California									
Los Angeles	0	0	0	0	1	0	1	10	6
Sacramento	3	2	0	0	0	0	0	1	0
San Francisco	1	1	0	0	0	0	1	7	1

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended July 23, 1927, compared with those for a like period ended July 24, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, June 19 to July 23, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927
101 cities	130	162	[2] 122	140	102	[3] 123	94	[4] 115	90	[5] 93
New England	59	116	64	88	57	[6] 92	78	132	33	63
Middle Atlantic	152	270	164	212	120	197	101	165	109	106
East North Central	162	132	117	119	106	102	110	93	98	108
West North Central	192	46	125	60	93	[7] 39	107	54	95	54
South Atlantic	45	107	82	143	65	[8] 86	32	83	34	[9] 87
East South Central	10	36	[2] 22	20	5	41	21	36	10	25
West South Central	43	67	47	122	43	[10] 52	26	[10] 73	39	[10] 129
Mountain	118	153	155	126	118	108	109	[11] 108	64	99
Pacific	131	113	129	76	179	86	158	113	174	65

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.
[2] Covington, Ky., not included.
[3] Bridgeport, Conn., Sioux City, Iowa, Savannah, Ga., and Fort Smith, Ark., not included.
[4] Fort Smith, Ark., and Denver, Colo., not included.
[5] Norfolk, Va., and Fort Smith, Ark., not included.
[6] Bridgeport, Conn., not included.
[7] Sioux City, Iowa, not included.
[8] Savannah, Ga., not included.
[9] Norfolk, Va., not included.
[10] Fort Smith, Ark., not included.
[11] Denver, Colo., not included.

Summary of weekly reports from cities, June 19 to July 23, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

MEASLES CASE RATES

	Week ended—									
	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927
101 cities	619	302	[2] 461	272	311	[3] 196	226	[4] 155	164	[5] 109
New England	425	327	318	341	245	[6] 322	179	241	108	197
Middle Atlantic	477	247	314	201	211	154	129	122	108	92
East North Central	838	214	739	206	481	182	412	110	279	90
West North Central	942	216	605	204	417	[7] 88	192	105	184	48
South Atlantic	695	531	432	447	291	[8] 249	201	221	127	[9] 141
East South Central	610	132	[2] 428	82	284	76	171	61	124	25
West South Central	95	130	52	151	47	[10] 116	17	[10] 108	13	[10] 56
Mountain	793	450	437	494	264	135	191	[11] 251	173	99
Pacific	482	843	458	775	335	539	327	448	212	280

SCARLET FEVER CASE RATES

101 cities	212	190	[2] 170	128	127	[3] 100	94	[4] 83	82	[5] 64
New England	236	237	186	221	158	[6] 182	99	130	85	100
Middle Atlantic	210	223	188	149	129	123	73	91	75	50
East North Central	251	209	187	132	145	91	119	89	89	75
West North Central	357	159	270	89	206	[7] 94	186	71	127	79
South Atlantic	151	96	65	82	63	[8] 56	45	56	35	[9] 41
East South Central	47	82	[2] 66	56	52	46	52	31	93	31
West South Central	30	38	60	17	34	[10] 43	52	[10] 39	82	[10] 17
Mountain	118	441	91	208	55	117	91	[11] 197	64	99
Pacific	158	139	150	86	121	60	94	50	91	92

SMALLPOX CASE RATES

101 cities	16	16	[2] 11	18	7	[3] 16	7	[4] 9	6	[5] 10
New England	0	0	0	0	0	[6] 0	0	0	0	0
Middle Atlantic	0	0	2	0	0	0	1	0	0	0
East North Central	14	12	10	21	7	15	6	17	8	13
West North Central	44	58	26	38	28	[7] 33	26	14	14	12
South Atlantic	26	29	11	18	9	[8] 24	6	9	6	[9] 12
East South Central	88	56	[2] 38	36	0	51	5	25	10	36
West South Central	17	13	21	13	4	[10] 0	13	[10] 9	13	[10] 9
Mountain	18	90	55	63	9	45	9	[11] 72	27	117
Pacific	32	21	19	73	24	73	21	13	8	21

TYPHOID FEVER CASE RATES

101 cities	12	11	[2] 16	15	13	[3] 17	22	[4] 21	18	[5] 19
New England	9	2	12	7	9	[6] 15	12	19	9	16
Middle Atlantic	10	4	11	6	7	8	11	11	9	8
East North Central	4	6	5	5	5	5	6	8	6	9
West North Central	4	6	10	8	16	[7] 10	14	16	12	14
South Atlantic	30	40	35	22	43	[8] 36	58	43	47	[9] 50
East South Central	36	61	[2] 126	132	52	163	165	153	134	122
West South Central	30	21	13	75	30	[10] 17	56	[10] 52	30	[10] 47
Mountain	0	18	27	9	0	18	0	[11] 36	46	27
Pacific	16	8	21	16	13	10	21	8	8	16

[2] Covington, Ky., not included
[3] Bridgeport, Conn., Sioux City, Iowa, Savannah, Ga., and Fort Smith, Ark., not included.
[4] Fort Smith, Ark., and Denver, Colo., not included.
[5] Norfolk, Va., and Fort Smith, Ark., not included.
[6] Bridgeport, Conn., not included.
[7] Sioux City, Iowa, not included.
[8] Savannah, Ga., not included.
[9] Norfolk, Va., not included.
[10] Fort Smith, Ark., not included.
[11] Denver, Colo., not included.

Summary of weekly reports from cities, June 19 to July 23, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

INFLUENZA DEATH RATES

	Week ended—									
	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927
95 cities	5	7	[2] 6	3	4	[12] 3	4	[13] 3	3	[9] 3
New England	0	5	5	5	7	[6] 2	0	5	2	0
Middle Atlantic	6	6	7	2	1	4	4	2	2	4
East North Central	3	5	5	3	7	3	4	1	4	2
West North Central	6	10	8	2	0	0	0	2	2	2
South Atlantic	6	2	8	6	0	[8] 1	6	6	4	[9] 2
East South Central	5	25	[2] 0	0	16	15	21	5	5	15
West South Central	22	4	13	4	4	[14] 0	9	[13] 10	9	0
Mountain	0	27	9	9	0	0	9	18	9	9
Pacific	0	10	4	3	4	3	4	7	4	3

PNEUMONIA DEATH RATES

	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927
95 cities	73	71	[2] 75	73	67	[12] 60	60	[13] 57	54	[9] 56
New England	68	86	92	60	54	[6] 60	57	56	33	56
Middle Atlantic	83	85	90	71	73	64	74	61	64	59
East North Central	60	71	61	80	65	49	46	45	47	55
West North Central	44	52	38	77	53	54	36	31	40	21
South Atlantic	95	46	89	57	72	[8] 59	55	63	57	[9] 75
East South Central	124	56	[2] 121	97	119	82	109	66	98	46
West South Central	71	43	53	73	53	[14] 99	79	[13] 78	53	65
Mountain	109	54	46	90	36	99	36	197	64	45
Pacific	42	131	42	69	53	55	46	97	35	72

[2] Covington, Ky., not included.
[6] Bridgeport, Conn., not included.
[8] Savannah, Ga., not included.
[9] Norfolk, Va., not included.
[12] Bridgeport, Conn., Savannah, Ga., Dallas, Tex., and San Antonio, Tex., not included.
[13] Dallas, Tex., not included.
[14] Dallas, Tex., and San Antonio, Tex., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,628,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

PLAGUE ON VESSEL

Greek Warship "Averoff"—At the port of Athens, Greece—June 24–30, 1927.—During the week ended June 30, 1927, a case of plague was reported on the Greek warship *Averoff*, at the port of Athens.

PLAGUE RATS ON VESSEL

Steamship Plutarch at London from Rio de La Plata.—The steamship *Plutarch* arrived at London from South American ports June 26, 1927. On June 30, 1927, the presence of plague rats on board was reported to the Ministry of Health. The diagnosis of plague in these rats has since been officially confirmed. The ship is said to have touched at the following ports: Bahia, Rio de Janeiro, Santos, Rio Grande, Rosario, Buenos Aires. The cargo consisted of flour, maize, wheat, and cased meats. No unusual mortality among rats was observed during the voyage, but dead rats were found during the discharge of the cargo and certain of them were found to be plague infected on bacteriological examination. As soon as the diagnosis was established, fumigation was undertaken with part of the cargo on board, after which many dead rats were found. The ship was again fumigated when empty and was then declared to be free from infection.

THE FAR EAST

Report for week ended July 16, 1927.—The following report for the week ended July 16, 1927, was transmitted by the Eastern Bureau of the Health Section of the Secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva.

Maritime towns	Plague		Cholera		Small-pox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Egypt: Port Said	1	0	0	0	0	0
British India:						
Karachi	----	0	----	0	1	0
Bombay	----	2	----	2	18	11
Madras	----	0	----	0	1	0
Calcutta	----	3	---	13	19	13
Bassein	----	5	----	0	0	0
Rangoon	----	0	----	0	8	2
Siam: Bangkok	0	0	1	0	0	0

Maritime towns	Plague		Cholera		Small-pox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Dutch East Indies:						
Surabaya	0	0	0	0	1	0
Banjermasin	0	0	0	0	27	0
French Indo-China:						
Saigon and Cholon	0	0	2	0	0	0
Tourane	0	0	1	0	0	0
China: Canton	0	0	3	2	0	0
Manchuria: Mukden	0	0	0	0	1	0
Japan: Nagasaki	0	0		0	3	4

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Arabia.—Jeddah, Aden, Perim
Iraq.—Basra.
Persia.—Mohammerah, Bender-Abbas, Bushire, Lingah
Ceylon.—Colombo
British India.—Chittagong, Cochin, Tuticorin, Negapatam, Vizagapatam, Moulmein.
Portuguese India.—Nova Goa
Federated Malay States.—Port Swettenham
Straits Settlements.—Singapore, Penang
Dutch East Indies.—Batavia, Banjermasin, Pontianak, Semarang, Menado, Cheribon, Makassar, Balikpapan, Padang, Palembang, Belawan-Deli, Tarakan, Sabang, Samarinda
French Indo-China.—Haiphong
Sarawak.—Kuching
British North Borneo.—Sandakan, Jesselton, Kudat, Tawao
Portuguese Timor.—Dilly
Philippine Islands.—Manila, Iloilo, Jolo, Cebu, Zamboanga.
Hong Kong.
China.—Amoy, Shanghai, Tientsin, Tsingtao.
Macao
Formosa.—Keelung, Takao
Chosen.—Chemulpo, Fusan
Manchuria.—Yingkow, Antung, Harbin, Changchun
Kwantung.—Port Arthur, Dairen
Japan.—Yokohama, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns
New Guinea.—Port Moresby
New Britain Mandated Territory.—Rabaul and Kokopo
New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.
Samoa.—Apia
New Caledonia.—Nouméa.
Fiji.—Suva
Hawaii.—Honolulu
Society Islands.—Papeete

AFRICA

Egypt.—Alexandria, Suez
Anglo-Egyptian Sudan.—Port Sudan, Suakin.
Eritrea.—Massaua.
French Somaliland.—Djibouti
British Somaliland.—Berbera
Italian Somaliland.—Mogadiscio.
Zanzibar.—Zanzibar
Kenya.—Mombasa
Tanganyika.—Dar-es-Salaam.
Seychelles.—Victoria
Portuguese East Africa.—Mozambique, Beira, Lourenço-Marques
Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban
Reunion.—Saint Denis
Mauritius.—Port Louis
Madagascar.—Majunga, Tamatave, Diégo-Suarez

AMERICA

Panama.—Colon, Panama

Reports had not been received in time for publication from:

Arabia.—Kamaran
Union of Socialist Soviet Republics.—Vladivostok.

Belated information:

Week ended July 2. *Banjermasin*, 5 smallpox cases
Week ended July 9. *Karikal*, 2 fatal cholera cases

Movement of infected ships:

Batavia.—The pilgrim ship *Armanestan* arrived from Jeddah on July 5 infected with smallpox
Singapore.—The pilgrim ship *Tangistan* arrived on July 10 and the *Ternate* on July 11, both from Jeddah and infected with smallpox

Other epidemiological information:

The Sanitary Maritime and Quarantine Council of Egypt reports that, during the week ending Wednesday, July 20, 6,256 pilgrims arrived at El Tor, of which 70 had come from Jeddah and 6,186 from Yambo. Among these was one case of smallpox, an Egyptian woman, no other infectious disease occurred. The representative of the Sanitary Maritime and Quarantine Council reports that the health conditions at Medina are satisfactory except for the occurrence of a few cases of smallpox.

The total number of pilgrims who have passed through El Tor since June 20 is 16,036, of whom 10,151 were Egyptians.

ARGENTINA

Plague—Interior—August 1, 1927.—Under date of August 1, 1927, plague was reported present in the interior of the Republic of Argentina, with one case at Entre Rios and two cases at Pampa.

CANADA

Communicable diseases—Quebec—Week ended July 30, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended July 30, 1927, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	2	Scarlet fever	37
Chicken pox	3	Tuberculosis	29
Diphtheria	33	Typhoid fever	46
Influenza	1	Whooping cough	12
Measles	21		

Typhoid fever—Montreal—January 2–July 23, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	Apr. 23, 1927	125	43
Jan. 15, 1927	4	3	Apr. 30, 1927	105	23
Jan. 22, 1927	1	2	May 7, 1927	106	19
Jan. 29, 1927	3	1	May 14, 1927	367	16
Feb. 5, 1927	1	0	May 21, 1927	770	26
Feb. 12, 1927	0	0	May 28, 1927	353	38
Feb. 19, 1927	1	2	June 4, 1927	239	37
Feb. 26, 1927	1	1	June 11, 1927	128	36
Mar. 5, 1927	9	1	June 18, 1927	86	
Mar. 12, 1927	203	4	June 25, 1927	75	23
Mar. 19, 1927	383	14	July 2, 1927	66	21
Mar. 26, 1927	568	22	July 9, 1927	52	10
Apr. 2, 1927	649	48	July 16, 1927	39	4
Apr. 9, 1927	386	40	July 23, 1927	22	9
Apr. 16, 1927	175	38			

Vital statistics—Quebec—May, 1927.—Births and deaths in the Province of Quebec for the month of May, 1927, were reported as follows:

Estimated population	2, 604, 000
Births	7, 174
Birth rate per 1,000 population	33. 06
Deaths	3, 174
Death rate per 1,000 population	14. 63
Deaths under 1 year	832
Infant mortality rate	115. 97
Deaths from:	
Accidents (all)	80
Cancer	132
Cerebrospinal meningitis	2
Diabetes	23
Diarrhea	152
Diphtheria	38
Heart disease	302
Influenza	73
Measles	33
Pneumonia	244
Poliomyelitis (infantile paralysis)	2

Deaths from—Continued.

Scarlet fever	6
Syphilis	7
Tuberculosis (pulmonary)	235
Tuberculosis (other forms)	68
Typhoid fever	161
Whooping cough	42

DAHOMEY (WEST AFRICA)

Yellow fever—Porto Novo—July 1, 1927.—A fatal case of yellow fever occurring in a Syrian woman, was reported at Porto Novo, Dahomey, July 1, 1927.

FRENCH GUINEA

Smallpox—Beyla—July 4-10, 1927.—During the week ended July 10, 1927, 9 cases of smallpox were reported at Beyla, French Guinea.

HAWAII TERRITORY

Rodent operations—Island of Hawaii—June, 1927.—During the month of June, 1927, 9,048 rodents were examined and none was found plague infected. The last case of rodent plague was reported July 24, 1926, from Hamakua, Hawaii.

Last case of human plague was reported May 23, 1927.

LATVIA

Communicable diseases—May, 1927.—During the month of May, 1927, cases of communicable diseases were reported in the Republic of Latvia, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	8	Paratyphoid fever	4
Diphtheria	50	Puerperal fever	2
Dysentery	4	Scarlet fever	262
Erysipelas	21	Tetanus	2
Influenza	93	Trachoma	28
Leprosy	1	Typhoid fever	42
Lethargic encephalitis	2	Typhus fever	5
Measles	998	Whooping cough	88
Mumps	3		

Population, 1,900,000.

MADAGASCAR

Plague—May 1-15, 1927.—During the period May 1 to 15, 1927, 42 cases of plague, with 37 deaths, were reported in the island of Madagascar. The occurrence was distributed in the four Provinces of Ambositra, Miarinarivo (Itasy), Moramanga, and Tananarive, as follows: Ambositra—cases 6, deaths 6; Miarinarivo (Itasy)—4 cases, 4 deaths; Moramanga—cases and deaths, 2; Tananarive—cases 30, deaths 25. The distribution of cases according to type was: Bubonic, 21; pneumonic, 10; septicemic, 11. The distribution of mor-

tality according to type was: Bubonic, 17 deaths; pneumonic, 9; septicemic, 11.

MALTA

Communicable diseases—June 1-30, 1927.—During the month of June, 1927, communicable diseases were reported in the Island of Malta, as follows:

Disease	Cases	Disease	Cases
Bronchopneumonia	5	Pneumonia	13
Chicken pox	3	Poliomyelitis	2
Diphtheria	1	Puerperal fever	2
Erysipelas	2	Scarlet fever	2
Influenza	1	Trachoma	32
Lethargic encephalitis	1	Tuberculosis	18
Malta fever	69	Typhoid fever	81
Measles	1	Whooping cough	49

Population, civil, 227,440.

SENEGAL

Plague—Smallpox—July 4-10, 1927.—During the week ended July 10, 1927, plague was reported in Senegal, West Africa, as follows: Cayor frontier—cases 7, deaths, 5; Dakar—cases 5, deaths, 3; region of M'Bour—2 fatalities among 30 suspect cases; region of Pout—1 case; Rufisque—20 cases, 18 deaths, in suburb of Guindel.

During the same period, 7 cases of smallpox were reported at Medina, a suburb of Dakar.

YUGOSLAVIA

Communicable diseases—June, 1927.—During the month of June, 1927, communicable diseases were reported in Yugoslavia as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	29	4	Measles	1,319	17
Cerebrospinal meningitis	5	2	Rabies	1	1
Diphtheria	103	13	Scarlet fever	451	68
Dysentery	69	5	Tetanus	31	11
Influenza	4		Typhoid fever	198	19
Lethargic encephalitis	1	1	Typhus fever	7	
Malta fever	1	1	Whooping cough	314	8

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the lists of countries included or the figures for the particular countries for which reports are given:

Reports Received During Week Ended August 12, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China				
Swatow	June 19-25	5		
India				June 5-11, 1927. Cases, 10,659; deaths, 6,684.
India, French Settlements in	May 1-28	1	1	
Indo-China (French)	Apr. 1-June 20	8,998		
Annam	do	1,147		
Cambodge	do	197		
Cochin-China	do	1,049		
Saigon	June 4-10	1	1	
Tonkin	Apr 1-June 20	6,605		
Philippine Islands.				
Province—				
Leyte—				
Carigara	June 23	1	1	Final diagnosis not received.
Siam				June 12-18, 1927 Cases, 14; deaths, 12 Apr 1-June 18, 1927: Cases, 512, deaths, 354.
Bangkok	June 12-18	3	2	

PLAGUE

Place	Date	Cases	Deaths	Remarks
Argentina	Jan 1-June 30	71	44	
Entre Rios	Reported Aug 1	1		
Pampa	do	2		
British East Africa				
Kenya	June 5-11	4		
Uganda	April, 1927	45	33	
Do	June 5-11	57	50	
Greece				
Athens	June, 1927	1		Including Piraeus.
India				June 5-11, 1927. Cases, 210; deaths, 194
Bombay	June 12-18	3	2	
Madras (Presidency)	June 5-11	29	11	
Indo-China (French)	May 11-June 20	14		
Kwang-Chow-Wan	May 21-June 10	57		
Java				
Batavia	June 12-18	17	17	Province
East Java and Madura	May 29-June 4	8	8	In native village, Pasoeroean Residency outbreak, June 14, 1927.
Madagascar				May 1-15, 1927. Cases, 42; deaths, 37. Bubonic, cases, 21, deaths, 17. Pneumonic, cases, 10; deaths, 9. Septicemic, cases, 11, deaths, 11.
Province—				
Ambositra	May 1-15	6	6	
Miarinarivo (Itasy)	do	4	4	
Moramanga	do	2	2	
Tananarive	do	30	25	Including town of Tananarive. Cases, 8, deaths, 7.
Senegal				July 4-10, 1927 Cases, 33, deaths, 28
Cayor frontier	July 4-10	7	5	
Dakar	do	5	3	
M'Bour	do		2	Among 30 suspects, in region.
Pout	do	1		
Rufisque	do	20	18	Suburb of Guindel.
Tunisia	Apr 21-May 31	131		
On vessel:				
S. S Averoff	June 24-30	1		At port of Athens, Greece.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	May 11-June 10	365		
Brazil.				
Rio de Janeiro	June 19 25	1	1	
British East Africa:				
Zanzibar	April, 1927	7	2	
British South Africa:				
Northern Rhodesia	June 18-24	26		Natives.

[1] From medical officers of the Public Health Service, American consuls and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended August 12, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Canada:				
Ontario—				
Ottawa	July 17-23	21		
Saskatchewan—				
Regina	do	1		
France	May 1-31	62		
Paris	June 21-30	3	1	
Gold Coast	Apr. 1-30	4		
Guatemala:				
Guatemala City	June, 1927		9	
Guinea (French)	July 4-10	9		
India				June 4-11, 1927: Cases, 4,688 deaths, 1,268.
Bombay	June 12-18	24	19	
Madras	June 26-July 2	6	2	
India, French Settlements in	May 1-21	49	29	
Indo-China (French)	May 11-June 10	46		
Italy	May 8-21	8		
Japan:				
Nagasaki	July 4-10	17	4	
Morocco	May 1-31	39		
Netherlands Indies:				
Borneo—				
Pasir Residency	Apr. 30-May 6			Epidemic outbreak.
Samarainda Residency	May 21-27			Do.
Nigeria	Mar. 1-Apr. 30	1,560	351	
Senegal:				
Medina	July 4-10	7		
Siam				June 12-18, 1927: Cases, 2; deaths, 3. Apr. 1-June 18, 1927: Cases, 92; deaths, 25.
Bangkok	June 12-18	1	1	
Straits Settlements	do	3		
Tunisia	May 11-June 10	5		
Union of South Africa:				
Cape Province—				
Elliott District	do			Outbreaks.
Kalanga District	do			Do.

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	May 11-June 10	154	13	
Algiers	June 24-30	3		Natives.
Bulgaria	Apr. 1-May 10	93	8	
Greece:				
Athens	June, 1927		9	
Irish Free State (Ireland):				
Cork County	July 3-9	1		
Latvia	May 1-31	5		
Lithuania	Feb. 1-Apr. 30	121	17	
Morocco	May 11-June 10	279		
Poland				May 29-June 4, 1927: Cases, 73; deaths, 11.
Rumania	May 8-14	104	6	
Tunisia	May 11-June 10	59		
Tunis	July 5-11	1		
Union of South Africa:				
Cape Province	June 12-18			Outbreaks.
Natal	do			Do.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Dahomey (West Africa):				
Porto Novo	July 1	1	1	In Syrian woman.
Gold Coast	Apr. 1-30	8	5	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to August 5, 1927[1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-28	1	1	
Kulangsu	June 21	1		
Shanghai	June 19-25	2		
Swatow	May 15-June 18	14	8	
India	Apr. 17-June 4			Cases, 38,121; deaths, 21,860.
Bombay	May 8-June 4	2	1	
Calcutta	May 8-June 18	390	247	
Karachi	May 29-June 4	1	1	
Madras	June 19-25	5	3	
Rangoon	May 8-June 18	14	10	
India, French Settlements in	Mar 30 Apr. 30	4	2	
Indo-China (French).				
Saigon	Apr. 30-June 3	127	92	Including Cholon
Philippine Islands				
Bulacan Province	June 7	1		At Mambog, Malolos.
Leyte Province—				
Palo	May 18	1		
Siam	May 1 June 11			Cases, 124, deaths, 62
Bangkok	do	29	9	

PLAGUE

Place	Date	Cases	Deaths	Remarks
Argentina				
Formosa	Reported July 6	3		
Azores				
St Michaels Island	May 15 June 3	2		
British East Africa				
Kenya	Apr 24 May 7	7	14	
Tanganyika	Mar 29-May 7		36	
Uganda	Jan 1-Feb 28	138	121	
Do	Mar 27-May 14	72	57	
Canary Islands				
Laguna District—				
Tejina	June 17	1		
Ceylon				
Colombo	May 1-June 11	13	8	Plague rats, 4.
Egypt	May 21 June 24			Cases, 6, deaths, 2.
Alexandria	June 4 10	1		
District—				
Biba	do	1		At Nana.
Beni-Souef	do	1		
Port Said	June 21	2	1	
Tanta District	June 4-10	1		
Greece	May 1 31	1	1	
Patras	May 30 June 11	4		
India	Apr 17-June 4			Cases, 20,994; deaths, 7,728.
Bombay	May 8-June 25	68	61	
Madras	May 1-June 4	57	22	
Rangoon	May 8 June 18	19	17	
Indo-China (French)	Apr 1-May 10	7		
Iraq.				
Baghdad	Apr 8-16	3	1	
Java				
Batavia	May 1 June 11	87	88	Province.
East Java and Madura	May 22-28	6	6	
Pasoeroean Residency	May 9			Outbreak reported at Ngadiwono.
Surabaya	Apr. 17-May 7	24	24	
Madagascar				Mar. 16-Apr. 30, 1927: Cases, 256; deaths, 135.
Province—				
Ambositra	Mar 16-Apr. 30	57	52	
Antsirabe	do	8	8	
Miarinarivo (Itasy)	do	39	39	
Moramanga	do	12	12	
Tananarive	do	136	120	
Tananarive Town	do	7	8	

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to August 5, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Peru	Apr.-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr 1-May 31	7	4	
Lima	do	13	4	
Lima City	Apr 1-30	5	1	
Senegal	May 23-June 26			Cases, 77; deaths, 25.
Baol	June 2-19	4	1	
Dakar	June 20-July 3	13	9	
Facel	July 6	17	8	
Guindel	June 20-26	11	2	
M'Bour	July 6	28	21	
Medina	June 13-19	2	2	
Rufisque	May 23-July 6	59	35	
Thies District	do	21	7	
Tivaouane	June 2-July 6	12	4	
Siam	Apr 1-June 11			Cases, 9, deaths, 7.
Bangkok	May 8-June 11	2	1	
Tunisia	Reported May 20	15		In districts of Sfax and Susa.
Turkey				
Constantinople	May 13-19	1		
Union of South Africa				
Cape Province—				
Maraisburg district	May 1-14	2	2	Native

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr 21-May 10	168		
Algiers	May 11-June 30	5		
Oran	May 21-July 10	32		
Brazil.				
Rio de Janeiro	May 22-June 18	4	4	
British East Africa:				
Kenya	Apr. 24-May 14	17	14	
Tanganyika	Mar 29-May 7		22	
British South Africa				
Northern Rhodesia	Apr 30-June 3	32		Native
Canada	June 5-July 16			Cases, 215.
Alberta	June 12-July 16	55		
Calgary	June 12-25	5		
British Columbia—				
Vancouver	May 23-29	2		
Manitoba	June 5-July 16			Cases, 14.
Winnipeg	June 12-July 15	12		
Ontario	June 5-July 16			Cases, 111.
Ottawa	June 12-July 16	34		
Toronto	June 19-July 23	9		
Quebec	do	13		
Saskatchewan	June 12-July 16	29		
Ceylon	May 1-7			Cases, 3; deaths,
China.				
Amoy	May 8-28	1		
Chefoo	May 8-11			Present.
Foochow	May 8-June 11			Do.
Hong Kong	May 8-June 18	13	14	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-June 25	4		
Dairen	May 2-22	6	4	
Fushun	May 15-June 5	9		
Harbin	June 13-19	1		
Mukden	May 22-June 25	3		
Ssupingkai	May 8-June 25	2		
Tientsin	May 8-28	11		
Chosen	Feb. 1-Apr. 30	354	84	
Chinnampo	Apr 1-May 31	2		
Fusan	Apr. 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr. 1-30	1		
Curaçao	May 29-June 4	1		Alastrim.
Egypt	May 7-June 17			Cases, 17, deaths
Alexandria	May 21-June 17	4	1	
Cairo	Jan 22-Feb. 11	4		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to August 5, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
France	Apr. 1-30			Cases, 66.
Paris	May 21-June 30	8	2	
Gold Coast	Mar. 1-30	18	4	
Great Britain:				
England and Wales	May 22-July 9			Cases, 1,654.
Bradford	May 29-June 11	2		
Cardiff	June 19-July 2	4		
Liverpool	do	1		
London	May 15-June 18	2		
Newcastle on Tyne	June 12-July 2	2		
Sheffield	June 12-July 9	18		
Scotland—				
Dundee	May 29-July 2	5		
India	Apr. 17-June 4			Cases, 39,648, deaths, 9,931.
Bombay	May 28-June 25	112	73	
Calcutta	May 8-June 18	270	206	
Karachi	May 15-June 25	8	5	
Madras	May 22-June 25	8	3	
Rangoon	May 8-June 18	125	38	
India, French Settlements in	Mar. 20-Apr. 30	96	59	
Indo-China (French)	Mar. 21-Apr. 10	190		
Saigon	May 14-20	1	1	
Iraq				
Baghdad	Apr. 10-16	2		
Basra	do	1		
Italy	Apr. 10-May 7	5		
Jamaica	May 29-June 25	9		Reported as alastrim.
Japan	Apr. 3-May 7	19		
Nagasaki City	Reported July 9	20		
Taiwan Island	May 21-31	1		
Java				
Batavia	May 22-28	1		
East Java and Madura	Apr. 24-30	1		
Latvia	Apr. 1-30	1		
Mexico:				
Durango	June 1-30		1	
La Oroya	Apr. 1-June 30			Present.
San Luis Potosi	May 29-July 16		7	
Tampico	June 1-10	1	1	
Morocco	Apr. 1-30	55		
Netherlands India				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in two localities.
Persia				
Teheran	Feb. 21-Apr. 20		5	
Poland	Apr. 10-May 14	6		
Portugal				
Lisbon	May 29-July 9	12	1	
Siam	May 1-June 11			Cases, 39, deaths, 8.
Bangkok	May 15-28	4	2	
Spain:				
Valencia	May 29-June 4	2		
Straits Settlements:				
Singapore	Apr. 1-May 28	4	2	
Sumatra:				
Medan	June 5-11	2		
Tunisia	Apr. 1-May 14	5		
Tunis	June 1-10	1		
Union of South Africa:				
Transvaal—				
Barberton District	May 1-7			Outbreaks.

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-May 10	109	16	
Algiers	May 11-June 10	21		
Oran	May 21-June 30	30		
Bulgaria	Mar. 1-31	58	6	
Sofia	June 4-10	1		
Chile:				
Concepcion	May 29-June 4		1	
Ligua	Mar. 16-31	2		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to August 5, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
China:				
Manchuria—				
Mukden	May 29-June 4	1		
Chosen	Feb 1-Apr. 30			Cases, 330; deaths, 30.
Chemulpo	May 1-31	4		
Gensan	do	1		
Seoul	Apr. 1-May 31	9		
Czechoslovakia				Apr. 1-30, 1927: Cases, 21.
Egypt	May 28-June 17			Cases, 79; deaths, 16.
Alexandria	May 21-July 1	8	3	
Cairo	Jan 15-21	1		
Estonia	Apr. 1-30			Case, 1.
Iraq:				
Baghdad	Apr. 24-30	1		
Irish Free State				
Cork County	July 3-9	1		In urban district
Latvia	Apr 1-30	12		
Mexico	Feb 1-28			Deaths, 26
Mexico City	May 29-June 11	7		Including municipalities in Federal District
Morocco	Apr 1-May 7	249		
Palestine	May 24 June 6			Cases, 3
Haifa	do	2		
Mahnaim	May 17 23	1		In Safad District.
Safad	May 17 June 20	3		
Peru				
Arequipa	Apr 1 30		1	
Poland	Apr 10 May 21	749	69	
Portugal				
Lisbon	May 29 June 4	1		
Rumania	Apr 3 May 7	583	41	
Tunisia	Apr 22-May 10	78		
Turkey				
Constantinople	May 13-19		2	
Union of South Africa	Apr 1-30			Cases, 55, deaths, 8, native In Europeans, cases, 2
Cape Province	Apr 1 May 18	42	5	
Albany District	June 5-11			Outbreaks
East London	May 22-28	1		Do
Glen Grey District	May 1-7			Do
Qumbu District	do			Do.
Natal	Apr 1 May 21	7	3	
Impendhle District	June 5-11			Do.
Orange Free State	Apr 1-May 28	5		
Transvaal	Apr. 1-30	1		
Yugoslavia	May 1-31			Cases, 4.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Liberia				
Monrovia	May 29-July 8	4	5	
Senegal	May 27			Cases, 3.
M'Bour	May 27-June 19	5	5	
Ouakam	June 2-8	1	1	
Tivaouane	May 27-June 8	5	5	

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TREASURY DEPARTMENT

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SPECIAL ARTICLES

A Report of Two Cases of Rat-Bite Fever

Dietetics in Institutions and in the Field

UNITED STATES
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1927

UNITED STATES PUBLIC HEALTH SERVICE.

HUGH S. CUMMING, *Surgeon General.*

DIVISION OF SANITARY REPORTS AND STATISTICS.

Asst Surg. Gen. C. C. PIERCE, *Chief of Division*

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PUBLIC HEALTH REPORTS

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TWO CASES OF RAT-BITE FEVER

By ANTHONY P. RUBINO, *Assistant Surgeon, United States Public Health Service, U. S. Marine Hospital, No. 14, New Orleans, La*

Rat-bite fever is prevalent in many parts of the world, especially in the Orient, and the number of cases reported in this country is increasing. The following two cases are of particular interest in that both patients were infected while catching rats for experimental purposes.

CASE NO. 1

On April 12, 1927, at the New Orleans agriculture dump, E. J. W., 42 years of age, engaged by the United States Public Health Service in the capture of live rats for certain investigative purposes, was bitten by one of the rats on the back of his right hand. Two days later his right index finger was also bitten. He applied iodine solution to the wounds and paid no further attention to them, as rat-catchers are frequently bitten without serious consequences.

On April 19, 1927, he had a chill, became feverish, perspired freely, and had generalized aching. After being confined to bed for about a week, he became ambulant and thought his general condition good until May 16, when his wound, which had healed, again became painful; he felt feverish and his ankles became swollen. On May 19 he first noticed marked glandular enlargement in the right epitrochlear and right axillary regions. These were very tender but did not break down. He also noticed for the first time an elevated, discrete, irregular, generalized, purplish rash of varying size, which was most distinct over the right arm and painful to touch. On May 20, he was admitted to the Marine Hospital, New Orleans, La., with the diagnosis of contusion, dorsal surface of right hand.

On May 23, the dorsum of the right hand was found to be reddened, swollen, and indurated at site of bite, without any evidence of suppuration. On the right forearm there were a few discrete, irregular, purplish papules of varying size. There was also a large right epitrochlear node and a large right axillary node. Both were painful to touch but did not suggest suppuration. Manipulation of the arm muscles was painful. Patient's temperature was normal and his general condition was very good. By May 28 the regional lymphadenitis and rash had entirely disappeared.

On May 29, the patient had a relapse, his temperature rising to 38.4° C., and the anterior cervical chain of lymph nodes and the right submaxillary gland became enlarged and painful. He complained of generalized pain and the characteristic rash reappeared on the right arm, chest, and abdomen. His temperature became intermittent, the patient at times being critically ill. On May 30, dark-field examination of blood was negative, blood serum did not agglutinate *B. tularense*, Wassermann serum reaction was negative, total white cell blood count was 10,200, and blood cultures on ordinary laboratory media and on bile media were negative.

On June 4, while afebrile, neosalvarsan was administered and full doses were repeated three times at weekly intervals. There has been no recurrence of the condition.

CASE NO. 2

On April 16, 1927, E. J. W., jr., 17 years of age, son of patient in Case No. 1, was also severely bitten by a rat on the left index finger while helping his father capture live rats. Iodine solution was applied. Six days later he had a chill and fever, painful left epitrochlear, left axillary, and left cervical regions, lymphadenitis; and patient also noticed a reddish, hivelike rash on arms, chest, and abdomen. After a week's illness in bed, he was able to go to a local dispensary to have his finger dressed. A period of 10 days apyrexia was followed by a relapse with repetition of symptoms. He recovered, and on May 18 his physician sent him to a local hospital for curettement of the wound. The patient states that on admission to that institution his ankles were swollen. A urinalysis on May 19 showed a trace of albumin, hyaline, fine and coarse granular casts, a few pus cells, a few red blood cells, mucus, and urates. On admission, he was given staphylococcus-streptococcus serobacterin and the wound was curetted and packed with iodoform gauze. On May 22 his temperature rose to 38.9° C. and was intermittent for a few days. This is considered to have been a second relapse. He was discharged from hospital on May 29, feeling well and with all findings negative.

Shortly after his arrival at home he again became ill, his ankles becoming swollen. He was seen at his home on June 11. At that time his temperature was 38.4° C., the rash was faint but definite, and the examination otherwise negative. This apparently was stage of defervescence of the relapse from the fourth paroxysm.

He entered hospital on June 21, 1927, during a period of apyrexia. Physical examination was negative, except that apparently the patient had recently lost considerable weight.

The fifth paroxysm began on June 23, 1927, when the patient's temperature rose to 38.6° C. At about noon he had a violent chill and at 8 p. m. the following day his temperature rose to 39.9° C.

His breath was exceedingly foul, the left arm and left cervical regions were painful, tender, slightly reddened, and distinctly hotter than the right. On the face, dorsal surface of both arms, and more clearly on the chest and abdomen, there appeared a discrete, irregular, papular, dark-red exanthem of varying size. There was marked prostration; both knees were exceedingly painful and involuntary fibrillary twitchings of the trunk muscles annoyed him. At this time a dark-field examination of the blood and blood cultures on dextrose broth and bile media were negative. Total white cell blood count was 24,600, with 90 per cent neutrophiles, a much higher count than usually noted in this disease. The following morning the temperature dropped to 36.1° C., and all symptoms subsided. Advantage was taken of the quiescent stage to administer neosalvarsan. This was repeated twice subsequently, the patient leaving the hospital on July 7, 1927, entirely recovered.

While there was no animal inoculation of blood from these patients, diagnoses of rat-bite fever were made because of the intermittent relapsing fever following a rat bite, the regional lymphadenitis without suppuration, a characteristic exanthem, and response to neosalvarsan treatment.

DIETETICS IN INSTITUTIONS AND IN THE FIELD[1]

By Lucy Minnigerode, *Superintendent of Nurses, United States Public Health Service*

Food, its quality, quantity, and preparation, has been a vital question in all ages and for all people.

Since the days when, according to legend and story, primitive man, handling a piece of meat which had been inadvertently cooked, licked his finger and found it good, methods of cooking have been improved and extended until to-day cooking and the preparation of food have become not only an art but a recognized science.

The nutrition worker and dietitian have come to stay, and their field of operations extends as their usefulness in various fields of endeavor is tested.

It is a backward institution to-day in the United States which does not employ a dietitian for supervision of its food department.

Universities are developing courses of instruction in home economics and dietetics leading to a degree of bachelor of science, such courses being outlined and approved by national organizations of workers.

The food provided for the soldiers and sailors may make or break a nation. This is a broad statement; but apart from the necessity for nutritious and sustaining food for soldiers and sailors, there is the

[1] Originally printed in the Bulletin of the Pan American Union for June, 1927, pp. 551-557.

necessity for providing for these men food which is also palatable and of the kind to which they are accustomed and which they like.

In this country for the Army mess there is a per capita allowance of 50 cents a day. This is also the allowance for the Philippine Scouts. The Navy allows 55 cents a day. Such an allowance for a ration prepared in large quantities in barracks or on ships should provide an excellent, well-balanced menu.

The allowance for Government hospitals is in excess of these rates, and usually runs from 60 cents to $1.20 a day. The allowance for hospitals is greater than a general ration allowance, because of the special diets and because sick people need a higher quality of food, probably, than people who are up and about; particularly for the tuberculosis hospitals quantities of especially nourishing food are needed.

Since interest in scientific preparation of food has become an accepted fact, we hear much of a balanced ration, calories, vitamins, etc.; and so much has been said and written of certain fundamental principles as applied to the nutriment of families that a balanced ration (a proper proportion of proteins, carbohydrates, fats, etc.) is generally found on the tables of those people who can afford to consider such a question. Among the poorer classes this balanced ration is not found, and as a result there develops among the poor, to a far greater extent than among the "well to do," all sorts of diseases of a dietary nature. Malnutrition in infancy leads to further handicaps in later life. Of course, if persons in poor economic circumstances were better informed as to food values they could secure a much better balanced ration with the money which they have to spend for food. The value of their ration is also dependent somewhat upon methods of cooking. Therefore, if poor people bought wisely and prepared their food well they would be much better nourished than if such were not the case, even though there is a limited amount of money to be expended for food.

The proper number of calories must be maintained, and the vitamins, with their life-giving properties, must be present in sufficient amount if the general health is to be built up and maintained.

Therefore, for a proper ration in the home a certain amount of knowledge of food values, of how to buy and how to prepare the family ration, is essential. For institutions, dietitians, graduates of recognized schools and colleges, have become a necessary part of the personnel. The dietitian takes charge of a dietary department. The nutritional worker is to the dietitian what the public health nurse is to the general nurse. She is a teacher in the field. Her efforts are directed toward bringing to housewives a knowledge of how better to prepare such food as they have, how to estimate a balanced ration, how to conserve surplus foods by the most approved methods of

Main kitchen, United States Marine Hospital, Stapleton, N. Y

Subsistence storeroom, United States Marine Hospital, Chicago, Ill

Main kitchen, United States Marine Hospital (National Leprosarium), Carville, La The steam equipment—roasters, steamers, cereal cookers, etc —is set in a depression in the floor, having a gradual slope toward the center where there is a separate drain A live steam pipe is provided, by means of which the entire kitchen and all equipment are sterilized routinely once a week Particular attention is given to corners, crevices, and the under sides of tables, and the kitchen is thus kept entirely free from roaches, ants, and similar pests

One of the dining-room compartments, United States Marine Hospital (National Leprosarium), Carville, La Two double windows, a lighting fixture, and an electric fan provide an ample amount of light, air, and ventilation. These dining compartments accommodate 24 patients

canning and preserving, and what is meant by hygiene in relation to food. It is for this reason that field work and instruction by nutritional workers among people of more moderate means has proved of immense value through teaching not only a better selection in foods but a better method of preparation, so that the nutritional qualities are safeguarded to the greatest extent. These activities are, and must be, coordinated with those of other health workers, chiefly the public health nurse, whose instruction would take in the general hygiene of the home, including, naturally, the cleanliness of kitchens, the proper disposal of garbage, and the protection of water supplies from surface or other contamination. Close cooperation between all health workers is necessary, therefore, if the best results are to be obtained.

Now comes the question of how the student can be best prepared to meet the great demands which will be made upon her and which she will be expected to meet.

1. Dietetic organizations have outlined courses for the training of dietitians, which must be accepted by and established in universities and colleges desiring to give such training.

2. Institutions and organizations employing these workers demand and need a certain type of knowledge to obtain the desired results.

3. The courses of instruction and the needs of the institution should be correlated to meet both needs.

(*A*) *Course of instruction.*—The course of instruction as outlined by the dietetic organizations includes, in addition to English, one language, the principals and methods of teaching, and many of the sciences, chemistry, zoology, psychology, sociology, physiology, bacteriology, physics, etc. The practical courses include cooking, food preparation, experimental cookery and meal service, marketing, teaching, problems of nutrition, etc. The theoretical course, four years, is followed by a practical course, under supervision, in a hospital dietetic department, of four to six months. The course entitles the graduate to a degree of bachelor of science. Those students desiring to do field work—that is, teaching of nutrition in public schools or other fields—are not required to take the six months' hospital apprenticeship.

(*B*) *Practical work in institutions and other organizations.*—Institutions and other organizations employing dietitians are more concerned with the development of the practical aspect of this profession. In hospitals, dietitians in varying grades are assigned to the department.

In their duties are included the purchase of food supplies, the employment of kitchen help, waitresses, and maids for diet kitchens, the proper preparation of food, the outlining of menus for all personnel, the preparation and serving of special diets, the maintenance of discipline in mess halls and among employees of the department, respon-

sibility for cleanliness and general hygiene of kitchens, storerooms, mess halls, and equipment, and many other incidental duties and tasks.

It is seen, therefore, that in this profession there are combined both practical and scientific functions. The dietitian's work is at once one of the most important and one of the most difficult activities of any hospital organization. Hours are long, since all meals for all types of personnel must be covered, and the apportionment must be checked up and carefully supervised. An accurate account of waste must be kept. The allowance of one-third pound per day per ration is considered the minimum of necessary waste and includes both the edible and inedible residue.

Since it is in this department that the greatest expenditure is made, so it is also here that the most effective economies may be practiced, not through the purchase of lower grade, cheaper foods, but through the elimination of unnecessary waste. In order to obtain desired results, therefore, the dietitian should frequently inspect the tray service and visit the patients in the wards so as to ascertain, first, whether the patients are receiving sufficient food and, second, whether this food is of a kind and quality acceptable and palatable. An unusual amount of edible refuse on served trays indicates inevitably one of two things: Either the portions served are too large or the food is not of the kind or quality which the patients desire.

The practical apprenticeship in institutions following the college course is given so that the student becomes thoroughly conversant with all these elements before she attempts to conduct the dietetic department of any institution. The chief dietitian in civilian hospitals is also expected to act as instructor in dietetics, both theoretical and practical, for student nurses.

(*C*) The question naturally arises, therefore, in view of the manifold duties which the dietitian must perform and the variety of types of personnel which must be fed and satisfied, whether the training is adequate to the needs. Combining, as it does, a practical with a scientific job, the balance between the two functions is a matter for very delicate adjustment.

It is a question in the minds of many institutional administrators whether the practical aspects of the work are not sacrificed to the theoretical and scientific sides of it.

It would seem, in view of the important practical character of this work, that more apprenticeship would be desirable. The sick person, below par in mind as well as body, with few interests beyond the daily hospital procedure and possibly with idiosyncrasies and fancies regarding food, must be understood, studied, and deferred to.

Only a close contact with patients over a prolonged period of time can give this understanding point of view.

In the Government hospitals the most acceptable dietitians are recruited from those schools, of which there are a few, which give practical experience along with their theoretical training.

It is a self-evident fact that in a comparatively new profession the evidence of ability to do the practical job will soon bring recognition of the scientific angles of the dietitians' duties.

To-day many medical cases are treated largely by diet. Accuracy in the preparation of special therapeutic diets, therefore, becomes a necessity, and too great care can not be expended toward making these diets as accurate as a medical prescription.

The position of dietitian in all institutions is analogous to that of the chief nurse in Government institutions or the superintendent of nurses in civilian hospitals. Both departments, nursing and dietetic, are so vitally necessary to the comfort and welfare of the patients that the closest cooperation between the department heads is essential if the best interests of the patients are to be served. Friction inside an institution always results disadvantageously to those for whom the institution is established.

The pay in Government hospitals ranges from $1,800 to $2,500 a year, with from $600 to $780 deducted for quarters, subsistence, and laundry. In civilian hospitals the pay range is approximately the same. For public health work or field work it may be higher, and in the fields outside the health activities it is still greater.

This profession is still young. It has made great strides in this country since the war, and each day sees new developments and opportunities opening up. The field is almost limitless for the right woman, given the right educational training, both practical and theoretical.

CARBON MONOXIDE POISONING ON A SHIP AT SEA

The following account of what is reported to be three cases of carbon monoxide poisoning, with one death, on board a tanker, is quoted from the British Medical Journal for January 8, 1927 (p. 86). It should serve as a warning to persons whose duties require them to enter large tanks used for storage or the holds of vessels used for the transportation of petroleum or its distillates.

A correspondent sends an account of an oil tanker in ballast which arrived at a foreign port with the captain dead and the first and second engineers ill from carbon monoxide poisoning. He states that in cleaning out the holds in readiness to take a cargo of gasoline the pump had to be taken apart. The second engineer descended to the hold and fell on his back, face upward. The first engineer heard of the accident, went down, and, as he set foot in the hold, fell similarly, face upward. The captain, learning of the double casualty, without waiting to put on a gas mask, and being a powerful

man, went down at once, but, before reaching the bottom of the ladder, fell under the pump, face downward. The three men were brought up to the deck in less than 10 minutes; the two engineers were bleeding from the nose and mouth. Artificial respiration restored the engineers after one and a half hours, but the captain appeared to have died instantaneously. The ship had previously carried a cargo of benzene, and our correspondent emphasizes the necessity of the board of trade insisting that anybody who enters a tanker's hold should be obliged to wear a gas mask. In this particular instance gas masks were available on the deck, though they were not used. He adds that this occurrence should also serve as a warning that care must be taken when "breaking the pump," which in this case was evidently a death trap.

THE NOTIFIABLE DISEASES

PREVALENCE DURING 1926 IN CITIES OF 10,000 TO 100,000 POPULATION

The annual summary of reports of notifiable diseases in small cities of the United States (population 10,000 to 100,000) for the year 1926, compiled by the Public Health Service from data furnished by the health officers of the cities, will soon be issued as Supplement No. 64 to Public Health Reports. It is printed in the same form as the summary for the year 1925, which was published in Public Health Reports, Vol. 41, No. 42, October 15, 1926, and issued separately as Reprint No. 1117. For reasons of economy the summaries of notifiable diseases in large cities (Supplement No. 63), small cities, and States (not yet compiled) are now being issued as supplements to Public Health Reports. As long as the supply lasts these supplements are available, free on request, to subscribers of Public Health Reports and others desiring them.

Current authoritative estimates of population are not available for some of the cities included in the compilation, but the numbers of cases and deaths are shown, and for many of the cities the case and death rates are computed and the average number of cases or the estimated expectancy based on the experience of several preceding years is given for some of the most important diseases.

The following is a list of diseases included in the summary:

Anthrax.
Chicken pox.
Dengue.
Diphtheria.
Influenza.
Lethargic encephalitis.
Malaria.
Measles.
Meningococcus meningitis.
Mumps.
Pellagra.
Pneumonia (all forms).
Poliomyelitis (infantile paralysis).
Rabies in animals.
Rabies in man.
Rocky Mountain spotted fever.
Scarlet fever.
Septic sore throat.
Smallpox.
Tuberculosis (all forms and respiratory system).
Typhoid fever.
Typhus fever.
Whooping cough.

COURT DECISION RELATING TO PUBLIC HEALTH

Referendum not allowable in case of an ordinance declared to be an emergency measure and in the interest of public health.—(Ohio Supreme Court; State ex rel. Smith *v.* City of Fremont, 157 N. E. 318; decided May 11, 1927.) On June 12, 1926, the State department of health, finding that the public water supply of the city of Fremont was impure and dangerous to health, ordered the city to change the source of its water supply or to install satisfactory purification works. The city was given a year in which to comply with the order.

On June 15 an ordinance, providing for the issuance of bonds to pay for the installation of a filtration plant, was introduced in the city council, and on June 29 the said ordinance was adopted.

On June 28 more than 10 per cent of the duly qualified electors of the city filled an initiative petition, providing for the drilling of additional deep wells and for a change of the source of the city's water supply from the Sandusky River to certain deep wells then owned by the city and to such other wells as might be necessary. This initiated ordinance was approved by the required vote at a general election held on November 2.

On August 3 the city council passed another ordinance authorizing the director of public service to advertise for bids and to contract for the construction of the filtration plant, and on September 8 a contract was awarded in accordance with plans and specifications approved by the State department of health.

In a mandamus proceeding against the city, the supreme court was asked for an order directing the defendant to employ an experienced deep-well driller and contractor for the purpose of drilling wells and constructing an emergency reservoir and equipment, as provided in the initiated ordinance adopted on November 2.

The court, with two justices dissenting, held that, since the city council had declared the ordinance adopted on June 29 to be an emergency measure and in the interest of public health and safety, there could be no referendum under the State constitution. The court stated:

> The effect of the initiative petition and its subsequent adoption by the people would be nothing less than a referendum upon the measure adopted by the city council. It is the invoking of initiative legislation as a substitute for and in lieu of a referendum; it is an attempt to repeal legislative action by invoking initiative action.

CALIFORNIA STATE DEPARTMENT OF PUBLIC HEALTH

Governor Young, of California, has appointed Dr. Walter M. Dickie director of the new State department of public health which began functioning July 29, 1927, the old California State

Board of Health passing out of existence July 28, 1927, after having been in operation continuously since April 1, 1870—more than 57 years.

Doctor Dickie has been secretary and executive officer of the California State Board of Health since August, 1920. Under the new law he will be a member of the Governor's Cabinet as director of the State department of public health.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Screening Sewage to Protect Bathing Beaches. Edmund B. Besselievre. *The American City*, vol. 36, No. 6, July, 1927, pp. 774–775. (Abstract by W. L. Havens.)

The danger of beach pollution is threatening practically all of our coastal cities and is causing more and more attention to be given the subject of sewage treatment, not only to escape the menace to health, but also to avoid the visual evidence of sewage pollution. Mechanical fine screening offers one method of treatment in which the cost of installation is surprisingly moderate and the upkeep and running charges are remarkably low. In cities where an incinerator for the garbage is available, the problem of screenings disposal is a minor one. In places where an incinerator is lacking, the screenings may be buried in adjacent fields or farms.

The Main Drainage System of Liverpool. H. C. Williams, Assistant City Engineer, Liverpool, England. *Journal Royal Sanitary Institute*, vol. 47, No. 12, June, 1927, pp. 677–685. (Abstract by G. H. Hazlehurst.)

This article is a description of the disposal system, its layout and construction, at the city of Liverpool.

Disposal of the greater part of the sewage is by dilution with sea water, where many thousands of volumes are available. A small percentage of the total population has made it necessary to relieve the load on the sewage farms by primary treatment works.

The layout consists of laterals, mains, and interceptors. The construction covers many types.

Bloomington and Normal Sewage Treatment Plant. Stanley Pinel. *Water Works*, vol. 66, No. 4, April, 1927, pp. 141–145. (Abstract by H. B. Hommon.)

The treatment plant was designed to treat sewage from a population of 54,000 (estimate for 1950) and includes grit chamber, pumping station, primary settling tanks (Imhoff), sludge-drying beds, dosing tanks, sprinkling filters, and secondary tank with mechanical device for concentrating sludge around outlet.

About one-third of the sludge beds is covered with a greenhouse type of building. The sprinkling filters, made of crushed stone, are 8 feet deep.

Sewage Treatment and Disposal Research for California. C. G. Gillespie. *Western Construction News*, vol. 2, No. 4, February 25, 1927, pp. 31–32. (Abstract by E. A. Reinke.)

This is an argument in favor of a bill before the California State Legislature to appropriate moneys for sewage and industrial waste research. An outline of the proposed work is given. The article should be of particular value to engineers who wish to support similar legislation.

Court Decides Use of Private Stream for Drainage Constitutes Illegal Possession. Memorandum furnished by Canadian Department of Health. (Abstract by V. M. Ehlers.)

Litigation begun July, 1923, by Dr. D. E. Lecavalier against the city of Montreal to restrain the city from using certain land owned by Doctor Lecavalier for drainage was concluded April, 1927, the Superior Court decreeing that the city of Montreal should pay Doctor Lecavalier $144,000 for the property, and a registration of the present judgment is to serve as a legal title to the property.

In 1923 the city was enjoined by the court to refrain from sending drainage through the property in question. Refusing to refrain, the city was fined $500 for contempt. This procedure was repeated in 1924 and again in 1925, when the fine was increased to $2,000.

Inasmuch as the city had refused to abide by the decision of the court in these three instances, the judgment stated that the city had obtained illegal possession of the property, thereby entitling the plaintiff to receive payment. The amount due as decreed by the court was based upon the opinion of an expert real-estate man and included interest at 5 per cent per annum for a period of 12 years, the time during which the city had illegally used the land.

Public Health Engineering in Latin America. E. H. Magoon. *American Journal of Public Health*, vol. 17, No. 4, April, 1927, pp. 336–341. (Abstract by Chester Cohen.)

The article is a discussion of the working plans of the sanitary service in the various Latin American countries. It describes the organization and administration of the departments of sanitation and sanitary engineering and gives an idea of the scope of work and general attitude of the public towards the problems of public health engineering.

The sanitary service of Nicaragua is interesting in that it gives considerable responsibility to the engineering section and represents an organization suitable for rapid and efficient progress in the field work of the health department without involving large expenditures by the State. The existing health divisions have been united into a compact unit, and each city and town government is obliged by law to set aside 10 per cent of its revenues for sanitary works or for the maintenance of municipal sanitary service as directed by the director general of health. The municipal governments are required to submit plans to this director for approval of all works which have a relation to public health, such as public markets, slaughter houses, hospitals, asylums, water systems, sewerage systems, drainage systems, schools, etc. The health law empowers the section of sanitation and sanitary engineering to have in its charge the approval of all sanitation plans of the town, sanitation of the ports and such measures as may be necessary to avoid the invasions of diseases, approval of plans of public buildings and residences which have to do with public hygiene, sanitary inspections of public and private buildings, the direction of antimalaria work, the adoption of types of latrines for different regions of the country, and such studies and investigations as may be assigned them by the director general.

Typhoid Fever—Chicago Establishes a Record. Dr. Herman N. Bundesen, Commissioner of Health. *Chicago's Health*, vol. 21, No. 4, January 25, 1927, pp. 26–32. (Abstract by I. W. Mendelsohn.)

In 1926 there were 149 cases of and 24 deaths from typhoid fever, the death rate being 0.79 per 100,000 population. This is the lowest death rate for typhoid fever in the city's history. Comparative figures are given, including city records since 1867, and of other large cities of the United States. The tables also include an interesting statistical analysis of the occurrence of typhoid fever in the city in 1926. The number of typhoid carriers on record at the end of the year was 49.

The effective control of typhoid fever in Chicago is attributed to: (1) More careful and more exact chlorination of the water supply; (2) more effective and more efficient Pasteurization of the milk supply; and (3) more careful work in the discovery and supervision of carriers.

Opportunities for Engineers in the United States Civil Service. United States Civil Service Commission Pamphlet, November, 1926. 42 pages. (Abstract by I. W. Mendelsohn.)

This pamphlet gives general information of the work performed by various engineers, including sanitary, in all branches of the Federal Government, together with the number of engineers in the various grades and salaries received. Sanitary engineers are employed in the Bureau of Animal Industry, Department of Agriculture (2), the Public Health Service (22), the Veterans' Bureau (1), and the Quartermaster Corps, War Department (2).

Annual Report of President of Board of Health of the Territory of Hawaii for Fiscal Year Ending June 30, 1926. 207 pages. (Abstract by I. W. Mendelsohn.)

This report gives a review of work accomplished by each bureau of the health department. The reports of the sanitary inspectors of the islands consider supervision of milk supplies, rural sanitation, sanitation of canneries, sugar cane and pineapple plantations, garbage and refuse disposal, mosquito and plague control, plumbing, and water and sewerage.

Bureau of Sanitary Engineering.—The activities of this bureau include preparing plans and specifications for several public cottages and buildings, including those for the board of health; investigating public water supplies and sewage disposal conditions; preparing an estimate of the population of the Territory and its subdivisions; preparing maps of various kinds for all bureaus of the health department; and water analyses in the laboratory.

During the year four public water-supply systems were installed. Plans were being prepared for four new public supplies, and also for additions to the Honolulu system. Plans are being prepared for a number of public sewerage systems.

The liquid wastes from industries, including pineapple canneries at Honolulu, are being discharged into Kalihi Bay, part of Honolulu harbor. This is causing a serious condition.

Annual Report of the International Health Board of the Rockefeller Foundation for the year 1925. *The Military Surgeon*, vol. 59, No. 3, September, 1926, pp. 379–383. (Abstract by R. E. Tarbett.)

The board gave assistance to public health enterprises in 97 States and countries, in connection with disease surveys, control of yellow fever and hookworm, studies in connection with malaria control, assistance in rural health work, and educational work.

In addition to work in Tennessee with the State board of health, hookworm control was carried on in the Spanish-American countries and the West and East Indies. Field studies in malaria and malaria demonstrations were continued in 12 States of the United States—Porto Rico—one state each in Brazil and Argentina—Italy, Palestine, and the Philippine Islands, some work also being done in Haiti, Costa Rica, and Nicaragua.

The freedom of the Western Hemisphere from yellow fever released men and funds for work on the West Coast of Africa, this work being started about the middle of the year.

Assistance was also rendered to the county health service in the United States.

A Summary of the Sanitary Condition of Incorporated Cities of Florida, 1927. Pamphlet, Bureau of Engineering, Florida State Board of Health. 40 pages. (Abstract by E. J. Theriault.)

Results of sanitary surveys. The condition of the towns is of January–February, 1927. Members of the field force of the bureau of engineering made the necessary visits to each town and city. It is proposed to make this "inventory" of sanitary conditions each year.

State Regulation of Public Baths, Swimming Pools, Laundries or Washhouses, and Comfort or Convenience Stations. Anon. *Journal of the American Associa-*

tion for Promoting Hygiene and Public Baths, vol. 9, April, 1927, pp. 63–65. (Abstract by Arthur P. Miller.)

This compilation is a summary of the State regulations on the places enumerated in the title. It would be exceedingly useful to anyone desiring to prepare such regulations or revise existing ones.

The Comfort Zone for Men at Rest Stripped to the Waist. C. P. Yaglogiou. *Journal of the American Society of Heating and Ventilating Engineers*, vol. 33, No. 5, May, 1927, p. 285. (Abstract by Leonard Greenburg.)

This paper records the results obtained in a series of experiments designed for the purpose of delineating the comfort zone for men at rest and stripped to the waist. The experiments were performed in the psychrometric chamber of the department of ventilation and illumination, Harvard School of Public Health. Eighty-five men acted as subjects, their ages varying from 20 to 55 years. Experiments took place in the winter of 1925-26, and in the summer of 1926. The humidity was maintained at 30 per cent in 8 of these studies and at 70 per cent in 8 other studies. In general, the experiments took place in the afternoon and lasted from 2¼ to 4 hours. While in the chamber the subjects sat at their ease in chairs and read, wrote, or conversed. Every 10 minutes they were asked to express their sensations of warmth in five different groups, viz: (1) cold; (2) comfortably cool; (3) very comfortable; (4) comfortably warm; (5) too warm. In order to eliminate the effects of diurnal changes in the adaptation to atmospheric conditions, the region of probable comfort was explored by starting at a warm condition and going to the most comfortable condition and starting at a cool condition and increasing temperatures to the most comfortable condition, and lastly by starting at the most comfortable condition and in one series by increasing temperatures and in other series by decreasing temperatures. From these studies the comfort zone for men at rest and stripped to the waist was found to lie between 66° and 83° on the effective temperature scale with the optimum at 72½°. The author feels that the failure to discover evidence of seasonal acclimatization may proceed from either of two causes: the data obtained in the summer may be too few, or the seasonal changes in adaptation to climate may be smaller than the experimental error. A valuable thermometric chart for human beings at rest and stripped to the waist is presented. This is similar to the previous charts issued by the American Society of Heating and Ventilating Engineers, but in addition it is provided with a comfort scale.

School Ventilation Laws. Thomas J. Duffield. *Journal of the American Society of Heating and Ventilating Engineers*, vol. 33, No. 6, June, 1927, p. 388. (Abstract by Leonard Greenburg.)

This very brief paper provides certain basic principles which the New York State Commission on Ventilation have formulated in response to requests for suggestions as to the matter which should be included in school ventilation laws. The requirements for heating and ventilation are essentially the following: (1) The provision of sufficient heating capacity to heat (*a*) corridors, gymnasiums, and shops to a temperature of 65°; (*b*) swimming pools and dressing rooms, 75°; (*c*) all other occupied rooms, 68°; (2) all classrooms shall have at least 15 square feet of floor space per pupil and should have a system of ventilation capable of avoiding the production of unpleasant odors usually associated with more than 15 parts of carbon dioxide per 10,000, and capable of functioning without producing chilling drafts. Such ventilation shall be accomplished by either window gravity or mechanical means or by any other method which will attain the desired result. Ventilation of auditoria, chemical laboratories, shops, etc., shall be obtained preferably by mechanical means; (3) every schoolroom shall be provided with at least one thermometer; (4) an approved system of ventilation shall be maintained in operation whenever school is in session.

Report of the Committee on Milk Supply. Anon. *American Journal of Public Health*, vol. 7, No. 4, April, 1927, pp. 367–379. (Abstract by R. E. Irwin.)

The committee gave consideration to "(1) the effect of the processing of milk, especially Pasteurization, on its creaming ability, and (2) an outline of the principles upon which definitions of Pasteurization should be based."

"In the literature reviewed on the creaming ability of milk, the committee found that various factors had been reported by investigators as affecting the creaming ability of raw milk. These include the breed of cattle from which the milk is obtained, the stage of lactation of the dairy cow, the percentage of fat in the milk and the size and grouping of the fat globules, the viscosity of the milk serum, the temperature of the milk during creaming, the recreaming of the milk, the passing of the milk through a separator and remixing the cream and the milk, and the agitation of the milk."

"The factors reported in the literature as affecting the creaming ability of the milk after it reaches the Pasteurization plant are clarification, Pasteurization (including heating and holding, type of apparatus, heating medium), agitation, cooling, and storing."

In discussing the principles on which a definition for Pasteurization should be based, the committee includes the following: "(1) Health officers are not now possessed of the proper data to enable them wisely to formulate and apply a complete definition of Pasteurization; (2) a proper definition of Pasteurization will be one which applies to every particle of milk Pasteurized and which requires in addition a margin of safety for the design and operation approximations of commercial practice; (3) each make of apparatus must be tested to determine its required margin of safety and to disclose design defects which must be corrected, and then subsequent tests should be made to determine the continued efficiency of the apparatus under operating conditions; (4) the testing work should preferably be done by an agency whose work will be respected nationally by both health officers and the industry; (5) until the desired information is available health officials should support vigorously effective control over Pasteurization, and in addition to existing time and temperature requirements, they should apply the Pasteurization specifications outlined in this report."

Food Poisoning by Rats. Anon. *Hygeia*, vol. 5, No. 6, June, 1927, p. 14. (Abstract by H. D. Cashmore.)

The matter of food poisoning by rats is still an important problem. Meyer and Matsumura, of the California Hooper Foundation for Medical Research, found approximately 8 per cent of the rats examined infected with one or two transmissible bacterial diseases, 2 per cent shedding virulent types capable of infecting food, and, further, that 6 per cent near slaughterhouses and retail merchants could do this.

Feces were added to food of kittens and tame rats and four rat-borne diseases were produced—hemorrhagic septicemia, plague, rat typhoid, and pseudotuberculosis. The first, being similar to plague, has complicated the campaigns against it, but now that the specific organism has been located and classified, the disease can be definitely diagnosed.

If conditions exist as these observers picture them, it is high time that a very definite program for the eradication of the rat be instituted, for there are no doubt worse conditions elsewhere than these men found.

Examination for Entrance into the Regular Corps of the United States Public Health Service

Examinations of candidates for entrance into the Regular Corps of the United States Public Health Service will be held at the following-named places on the date specified:

Washington, D. C	Nov. 7, 1927.
Chicago, Ill	Do.
New Orleans, La	Do.
San Francisco, Calif	Do.

Candidates must be not less than 23 nor more than 32 years of age, and they must have been graduated in medicine at some reputable medical college, and have had one year's hospital experience or two years' professional practice. They must pass satisfactorily oral, written, and clinical tests before a board of medical officers and undergo a physical examination.

Successful candidates will be recommended for appointment by the President, with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon General, United States Public Health Service, Washington, D. C.

DEATHS DURING WEEK ENDED AUGUST 6, 1927

Summary of information received by telegraph from industrial insurance companies for week ended August 6, 1927, and corresponding week of 1926. (From the Weekly Health Index, August 10, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Aug 6, 1927	Corresponding week 1926
Policies in force	68, 155, 875	65, 044, 993
Number of death claims	11, 530	10, 197
Death claims per 1,000 policies in force, annual rate	8. 8	8. 2

Deaths from all causes in certain large cities of the United States during the week ended August 6, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, August 10, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Aug. 6, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Aug. 6, 1927 [2]
	Total deaths	Death rate [1]		Week ended Aug. 6, 1927	Corresponding week 1926	
Total (66 cities)	5,715	10.4	[3] 10.6	645	[3] 712	[4] 54
Albany [5]	32	13.9	13.6	3	1	63
Atlanta	82			17	11	
White	48			8	6	
Colored	34	(6)		9	5	
Baltimore [5]	194	12.4	13.3	25	14	77
White	141		11.9	16	10	62
Colored	53	(6)	21.5	9	4	140
Birmingham	57	13.8	15.6	8	6	
White	26		11.4	2	3	
Colored	31	(6)	19.5	6	3	
Bridgeport	20			3	2	56
Buffalo	124	11.8	10.8	17	19	71
Cambridge	19	8.0	9.8	1	4	18
Camden	16	6.3	11.1	3	2	52
Canton	13	6.0	5.7	2	0	47
Chicago [5]	575	9.7	10.0	74	71	64
Cincinnati	111	14.0	16.7	15	18	94
Cleveland	144	7.6	9.1	18	21	48
Columbus	62	11.1	12.4	7	8	65
Dallas	48	12.0	12.1	5	12	
White	35		11.6	3	11	
Colored	13	(6)	15.4	2	1	
Dayton	41	11.9	6.2	6	4	99
Denver	60	10.8	11.0	5	3	
Des Moines	31	10.8	8.6	5	1	84
Detroit	223	8.7	9.8	36	40	57
Duluth	25	11.3	10.6	1	3	22
El Paso	27	12.3	8.6	6	5	
Erie	19			2	2	39
Fall River [5]	24	9.4	13.9	3	6	53
Flint	19	6.9	6.9	7	6	114
Fort Worth	39	12.4	8.5	2	5	
White	33		7.4	2	5	
Colored	6	(6)	16.5	0	0	
Grand Rapids	23	7.5	8.0	3	2	44
Houston	53			9	6	
White	33			7	6	
Colored	20	(6)		2	0	
Indianapolis	69	9.6	12.6	6	13	47
White	57		12.1	5	11	45
Colored	12	(6)	16.6	1	2	61
Jersey City	53	8.6	8.4	3	8	22
Kansas City, Kans.	33	14.7	16.0	3	5	58
White	24		11.3	3	2	67
Colored	9	(6)	38.2	0	3	0
Kansas City, Mo.	93	12.7	14.0	14	12	
Knoxville	31	15.8		2		
White	29			2		
Colored	2	(6)		0		
Los Angeles	231			23	25	66
Louisville	71	11.6	11.4	12	17	102
White	51		10.3	8	14	78
Colored	20	(6)	17.8	4	3	280
Lowell	27	12.8	12.3	9	3	173
Lynn	22	10.9	7.0	1	1	26
Memphis	79	23.0	19.4	10	11	
White	36		10.1	2	4	
Colored	43	(6)	36.4	8	7	
Milwaukee	102	10.0	8.8	7	7	33
Minneapolis	64	7.6	9.7	6	5	34
Nashville [5]	46	17.4	13.3	6	5	
White	30		8.5	4	3	
Colored	16	(6)	25.4	2	2	
New Bedford	21	9.2	10.0	3	6	52
New Haven	24	6.8	7.4	0	3	0

See footnotes at end of table

Deaths from all causes in certain large cities of the United States during the week ended August 6, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926—Continued

City	Week ended Aug. 6, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Aug. 6, 1927
	Total deaths	Death rate		Week ended Aug. 6, 1927	Corresponding week 1926	
New Orleans	160	19.7	17.5	20	17	
White	88		14.1	9	12	
Colored	72	(6)	27 3	11	5	
New York	1,115	9.7	9 9	129	131	53
Bronx Borough	152	8.6	8.3	12	11	38
Brooklyn Borough	367	8.4	7.9	52	45	54
Manhattan Borough	442	12.7	14 0	53	58	62
Queens Borough	110	7 1	7 2	10	11	43
Richmond Borough	44	15 6	10.9	2	6	37
Newark, N. J	79	8.8	10 6	9	17	45
Oakland	53	10.4	7 6	3	4	35
Oklahoma City	28			4	4	
Omaha	47	11 2	11 6	5	7	56
Paterson	26	9 4	10 6	0	3	0
Philadelphia	454	11.6	10.1	37	56	49
Pittsburgh	133	10 8	12 1	17	21	59
Portland, Oreg	50			1	4	11
Providence	47	8 7	7.6	5	6	42
Richmond	42	11 4	13 5	4	9	53
White	22		10 5	2	2	40
Colored	20	(6)	20 9	2	7	76
Rochester	57	9 2	10 7	5	3	42
St. Louis	160	9.9	11 3	17	25	
St. Paul	44	9 2	9.0	3	3	27
Salt Lake City [5]	37	14.2	10 2	3	2	46
San Antonio	41	10 1	14 0	5	9	
San Diego	30	13.6	11.4	6	2	128
San Francisco	163	14 8	11 3	9	6	56
Schenectady	10	5 6	10.7	0	1	0
Seattle	73			4	3	42
Somerville	14	7.2	6.3	0	4	0
Spokane	22	10.5	12 0	3	1	75
Springfield, Mass	23	8 2	9 7	1	1	15
Syracuse	43	11.4	10.1	4	5	51
Tacoma	17	8.3	13.3	1	2	24
Toledo	47	8.1	9.7	3	5	29
Trenton	31	11.8	7.4	4	0	70
Washington, D. C	99	9.6	12.3	12	16	69
White	61		8 7	6	7	51
Colored	38	(6)	23 0	6	9	110
Waterbury	26			3	5	71
Wilmington, Del	17	7.0	7 6	1	4	25
Worcester	33	8.8	8.1	2	0	24
Yonkers	11	4.8	9.4	1	2	23
Youngstown	18	5.6	10.7	2	3	28

1 Annual rate per 1,000 population.
2 Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
3 Data for 65 cities.
4 Data for 60 cities.
5 Deaths for week ended Friday Aug. 5, 1927.
6 In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta 31, Baltimore 15, Birmingham 39, Dallas 15, Fort Worth 14, Houston 25, Indianapolis 11, Kansas City (Kans.) 14, Knoxville 15, Louisville 17, Memphis 38, Nashville 30, New Orleans 26, Richmond 32, and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended August 13, 1927

DIPHTHERIA	Cases
Alabama	17
Arizona	2
Arkansas	1
California	65
Colorado	21
Connecticut	33
Florida	10
Georgia	18
Idaho	2
Illinois	90
Indiana	18
Iowa [1]	5
Kansas	9
Louisiana	19
Maine	17
Maryland [1]	22
Massachusetts	38
Michigan	34
Minnesota	25
Mississippi	17
Missouri	18
Montana	2
Nebraska	2
New Jersey	68
New Mexico	6
New York [2]	37
North Carolina	37
Oklahoma [3]	14
Oregon	7
Pennsylvania	76
Rhode Island	4
South Carolina	19
South Dakota	2
Tennessee	21
Texas	22
Utah [1]	4
Vermont	1
Washington	16
West Virginia	12
Wisconsin	26

[1] Week ended Friday.
[2] Exclusive of New York City.
[3] Exclusive of Oklahoma City and Tulsa.

INFLUENZA	Cases
Alabama	12
Arkansas	14
California	4
Florida	4
Georgia	24
Illinois	23
Indiana	12
Kansas	8
Louisiana	10
Maryland [1]	5
Massachusetts	2
Oklahoma [3]	8
Oregon	9
South Carolina	106
Tennessee	5
Texas	24
Wisconsin	6

MEASLES	
Alabama	30
Arizona	3
Arkansas	14
California	50
Colorado	2
Connecticut	6
Delaware	2
Florida	10
Georgia	5
Illinois	29
Indiana	1
Iowa [1]	4
Kansas	23
Louisiana	1
Maine	1
Maryland [1]	12
Massachusetts	62
Michigan	23
Minnesota	13
Missouri	7
Montana	2
Nebraska	8
New Jersey	18
New Mexico	7

[1] Week ended Friday.
[3] Exclusive of Oklahoma City and Tulsa.

MEASLES—continued	Cases
New York [2]	93
North Carolina	164
Oklahoma [3]	21
Oregon	17
Pennsylvania	47
Rhode Island	1
South Carolina	52
South Dakota	4
Tennessee	6
Texas	8
Utah [1]	2
Vermont	6
Washington	30
West Virginia	6
Wisconsin	78
Wyoming	4

MENINGOCOCCUS MENINGITIS	
Alabama	2
California	2
Connecticut	1
Florida	2
Idaho	1
Illinois	3
Kansas	5
Michigan	1
Minnesota	1
Missouri	2
Montana	1
Nebraska	1
Oregon	8
Pennsylvania	1
Tennessee	1
Washington	1
West Virginia	1
Wisconsin	5

POLIOMYELITIS	
Alabama	1
Arizona	1
California	63
Colorado	1
Connecticut	8
Florida	2
Illinois	7
Indiana	3
Iowa [1]	1
Kansas	4
Louisiana	1
Massachusetts	28
Michigan	2
Minnesota	1
Mississippi	1
Missouri	8
Nebraska	1
New Jersey	13
New Mexico	9
New York [2]	13
North Carolina	1
Oklahoma [3]	11
Oregon	1
Pennsylvania	4
South Carolina	2

[1] Week ended Friday.
[2] Exclusive of New York City.
[3] Exclusive of Oklahoma City and Tulsa.

POLIOMYELITIS—continued	Cases
Tennessee	5
Texas	19
Wisconsin	2

SCARLET FEVER	
Alabama	19
Arizona	1
Arkansas	2
California	38
Colorado	19
Connecticut	8
Florida	5
Georgia	8
Idaho	3
Illinois	78
Indiana	30
Iowa	7
Kansas	28
Louisiana	8
Maine	23
Maryland	4
Massachusetts	81
Michigan	52
Minnesota	55
Mississippi	8
Missouri	22
Montana	29
Nebraska	28
New Jersey	29
New Mexico	6
New York	46
North Carolina	20
Oklahoma	9
Oregon	4
Pennsylvania	44
Rhode Island	4
South Carolina	13
South Dakota	3
Tennessee	35
Texas	14
Utah	8
Vermont	1
Washington	6
West Virginia	15
Wisconsin	68
Wyoming	2

SMALLPOX	
Alabama	3
Arkansas	2
California	7
Florida	7
Idaho	2
Illinois	4
Indiana	30
Iowa [1]	9
Kansas	2
Louisiana	1
Michigan	11
Mississippi	2
Missouri	3
Nebraska	6
North Carolina	4
Oklahoma [3]	30

[1] Week ended Friday.
[3] Exclusive of Oklahoma City and Tulsa.

SMALLPOX—continued

State	Cases
Oregon	15
Pennsylvania	1
South Carolina	3
South Dakota	3
Tennessee	2
Texas	16
Utah [1]	1
Washington	8
West Virginia	29
Wisconsin	6

TYPHOID FEVER

State	Cases
Alabama	70
Arizona	5
California	20
Colorado	10
Connecticut	3
Delaware	3
Florida	18
Georgia	83
Idaho	4
Illinois	59
Indiana	20
Iowa [1]	8
Kansas	22
Louisiana	43

[1] Week ended Friday.

TYPHOID FEVER—continued

State	Cases
Maine	8
Maryland [1]	51
Massachusetts	16
Michigan	15
Minnesota	10
Mississippi	29
Missouri	31
Montana	3
Nebraska	10
New Jersey	16
New Mexico	3
New York [2]	25
North Carolina	103
Oklahoma [3]	95
Oregon	3
Pennsylvania	29
Rhode Island	1
South Carolina	142
Tennessee	148
Texas	18
Utah [1]	2
Washington	3
West Virginia	24
Wisconsin	12
Wyoming	1

[1] Week ended Friday.
[2] Exclusive of New York City.
[3] Exclusive of Oklahoma City and Tulsa.

Reports for Week Ended August 6, 1927

DIPHTHERIA

State	Cases
District of Columbia	10
North Dakota	7

MEASLES

State	Cases
North Dakota	10

MENINGOCOCCUS MENINGITIS

State	Cases
North Dakota	1

SCARLET FEVER

State	Cases
District of Columbia	1
North Dakota	22

SMALLPOX

State	Cases
District of Columbia	1

TYPHOID FEVER

State	Cases
District of Columbia	5
North Dakota	2

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week.

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
April, 1927										
Arkansas	0	19	227	102	719	26	0	19	20	25
June, 1927										
Hawaii Territory	2	41	3		81		0	5	0	11
Rhode Island	0	48	1		30		1	107	0	0
July, 1927										
Arizona	0	6			318		14	13	1	10
Connecticut	4	77	5		131		4	85	0	9
Georgia	1	44	124	295	102	89	6	37	85	399
Nebraska		20			107		0	53	45	11
North Dakota	1	9		1	31		0	83	13	1
Vermont	0	4			158		2	15	0	3

April, 1927

	Cases
Arkansas:	
Chicken pox	120
Hookworm disease	1
Mumps	109
Ophthalmia neonatorum	2
Trachoma	5
Whooping cough	254

June, 1927

Chicken pox:	
Hawaii Territory	18
Rhode Island	71
Conjunctivitis:	
Hawaii Territory	1
German measles	
Rhode Island	2
Leprosy	
Hawaii Territory	4
Mumps	
Rhode Island	23
Ophthalmia neonatorum.	
Rhode Island	1
Septic sore throat	
Rhode Island	2
Tetanus	
Hawaii Territory	2
Whooping cough	
Hawaii Territory	35
Rhode Island	22

July, 1927

	Cases
Anthrax:	
Georgia	1
Chicken pox:	
Arizona	8
Connecticut	157
Georgia	8
Nebraska	30
North Dakota	17
Vermont	67
Dengue	
Georgia	1
Dysentery	
Georgia	78
German measles:	
Connecticut	9
Nebraska	19
Leprosy	
Arizona	1
Malta fever:	
Arizona	2
Mumps:	
Arizona	13
Connecticut	59
Georgia	34
Nebraska	70
North Dakota	3
Vermont	52
Rabies in animals	
Connecticut	4
Septic sore throat:	
Connecticut	3
Georgia	14
Tetanus	
Connecticut	3
Trachoma.	
Arizona	1
Tularaemia	
North Dakota	2
Typhus fever	
Georgia	1
Whooping cough.	
Arizona	2
Connecticut	113
Georgia	118
Nebraska	62
North Dakota	15
Vermont	84

PLAGUE-INFECTED GROUND SQUIRRELS IN CONTRA COSTA COUNTY, CALIF.

With further reference to the case of bubonic plague at Clayton, Contra Costa County, Calif., July 8, 1927,[1] Dr. Walter M. Dickie, director of the California State Department of Public Health, in a letter dated August 10, states that two groups of ground squirrels (four in one group and six in the other) from two ranches in the Clayton district have been proved positive for plague by laboratory inoculation and confirmed by cultures.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 95 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of nearly 30,350,000. The estimated population of the 92 cities reporting deaths is nearly 30,200,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

[1] Public Health Reports, July 22, 1927, p. 1920.

Weeks ended July 30, 1927, and July 31, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
41 States	967	858	
95 cities	550	454	520
Measles:			
40 States	1,845	2,588	
95 cities	340	610	
Poliomyelitis:			
42 States	142	63	
Scarlet fever:			
41 States	1,029	1,062	
95 cities	367	411	269
Smallpox:			
41 States	223	184	
95 cities	30	29	33
Typhoid fever:			
41 States	892	1,069	
95 cities	123	171	171
Deaths reported			
Influenza and pneumonia:			
92 cities	302	283	

City reports for week ended July 30, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	1	1	0	0	0	0	0	0
New Hampshire:									
Concord	22,546	0	0	0	0	0	0	0	0
Manchester	83,097	0	1	0	0	0	0	0	0
Vermont:									
Barre	10,008	0	0	0	0	0	0	0	0
Burlington	24,089	2	0	0	0	0	0	1	0
Massachusetts:									
Boston	779,620	18	33	25	2	1	68	8	10
Fall River	128,993	2	3	3	0	0	0	1	2
Springfield	142,065	5	1	3	0	0	0	0	0
Worcester	190,757	1	2	0	0	0	0	0	3
Rhode Island:									
Pawtucket	69,760	0	0	1	0	0	0	0	2
Providence	267,918	0	3	4	0	0	2	0	1
Connecticut:									
Bridgeport	(1)	0	4	2	0	0	0	0	1
Hartford	160,197	0	2	1	0	0	0	3	1
New Haven	178,927	0	1	0	0	0	3	2	1

[1] No estimate made.

City reports for week ended July 30, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	4	9	6	--------	0	5	5	6
New York	5,873,356	76	123	138	4	6	15	33	68
Rochester	316,786	3	4	1	--------	0	2	4	0
Syracuse	182,003	3	3	1	--------	0	15	0	1
New Jersey:									
Camden	128,642	2	2	3	0	0	0	1	3
Newark	452,513	26	6	9	0	0	1	12	5
Trenton	132,020	0	2	0	0	0	0	0	2
Pennsylvania:									
Philadelphia	1,979,364	21	38	34	--------	2	13	34	18
Pittsburgh	631,563	10	12	16	--------	1	33	4	10
Reading	112,707	1	1	2	--------	0	8	8	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	0	5	2	0	1	0	4	0
Cleveland	936,485	23	17	31	0	0	0	32	8
Columbus	279,836	3	2	4	0	0	0	0	0
Toledo	287,380	9	3	3	1	1	7	4	4
Indiana:									
Fort Wayne	97,846	1	1	0	0	0	0	0	1
Indianapolis	358,819	1	3	6	0	1	0	0	5
South Bend	80,091	0	0	1	0	0	0	0	3
Terre Haute	71,071	0	0	1	0	0	0	0	0
Illinois:									
Chicago	2,995,239	45	51	67	1	0	26	27	30
Springfield	63,923	2	0	0	0	0	0	0	0
Michigan:									
Detroit	1,245,824	9	31	23	2	0	2	18	8
Flint	130,316	0	3	2	0	0	2	1	3
Grand Rapids	153,698	1	2	0	0	0	9	1	2
Wisconsin:									
Kenosha	50,891	1	1	0	0	0	0	6	1
Madison	46,385	1	0	2	0	0	1	1	0
Milwaukee	509,192	25	9	14	0	0	31	27	2
Racine	67,707	1	1	1	0	0	0	0	0
Superior	39,671	0	0	1	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	7	0	2	0	0	0	0	1
Minneapolis	425,435	30	10	5	0	0	0	0	3
St. Paul	246,001	4	10	2	0	0	1	0	0
Iowa:									
Des Moines	141,441	0	2	3	0	--------	0	0	--------
Sioux City	76,411	1	1	1	0	--------	3	0	--------
Waterloo	36,771	0	0	2	0	--------	1	0	--------
Missouri:									
Kansas City	367,481	0	2	2	0	0	4	4	2
St. Joseph	78,342	0	1	1	0	0	0	0	1
St. Louis	821,543	0	19	10	0	0	7	17	--------
North Dakota:									
Fargo	26,403	0	0	0	0	0	0	0	0
Grand Forks	14,811	0	0	0	0	--------	0	0	--------
South Dakota:									
Aberdeen	15,036	0	0	0	0	--------	0	1	--------
Sioux Falls	30,127	0	0	0	0	--------	1	0	--------
Nebraska:									
Lincoln	60,941	0	0	1	0	0	3	1	0
Omaha	211,768	0	4	3	0	0	1	0	0
Kansas:									
Topeka	55,411	1	0	0	1	0	3	0	1
Wichita	88,367	0	1	0	0	0	0	1	0
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	0	0	1	0	0	1	0	0
Maryland:									
Baltimore	796,296	5	11	25	0	0	6	1	5
Cumberland	33,741	0	1	0	0	0	0	0	0
Frederick	12,035	0	0	0	0	0	0	0	0
District of Columbia:									
Washington	497,906	3	4	18	0	0	1	0	3

[1] No estimate made.

City reports for week ended July 30, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
SOUTH ATLANTIC—con.									
Virginia:									
Lynchburg	30,395	0	0	1	0	0	0	0	0
Norfolk	(1)	0	0	0	0	0	2	1	4
Richmond	186,403	0	2	1	0	0	2	1	1
Roanoke	58,208	4	0	0	0	0	1	0	0
West Virginia:									
Charleston	49,019	0	1	1	0	0	0	0	1
Wheeling	56,208	3	0	0	0	0	0	0	0
North Carolina:									
Raleigh	30,371	1	0	0	0	0	3	0	0
Wilmington	37,061	0	0	0	0	0	0	0	0
Winston-Salem	69,031	1	0	0	0	0	7	11	2
South Carolina:									
Charleston	73,125	0	0	0	4	0	0	0	2
Columbia	41,225	0	0	0	0	------	10	0	------
Greenville	27,311	------	0	------	------	------	------	------	------
Georgia:									
Atlanta	(1)	0	2	1	10	0	0	0	5
Brunswick	16,809	------	0	------	------	------	------	------	------
Savannah	93,134	0	0	1	0	0	3	1	0
Florida:									
Miami	69,754	0	------	1	0	0	1	0	0
St. Petersburg	26,847	0	0	0	0	0	0	0	0
Tampa	94,743	0	0	0	1	1	2	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	------	1	------	------	------	------	------	------
Louisville	305,935	0	2	1	0	0	2	1	1
Tennessee:									
Memphis	174,533	0	2	0	0	1	0	0	0
Nashville	136,220	0	1	1	0	0	0	2	3
Alabama:									
Birmingham	205,670	1	1	4	6	0	7	4	5
Mobile	65,955	0	0	0	0	1	0	0	0
Montgomery	46,481	0	0	0	0	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	------	0	------	------	------	------	------	------
Little Rock	74,216	1	0	0	1	0	2	0	2
Louisiana:									
New Orleans	414,493	0	4	6	4	1	1	0	9
Shreveport	57,857	0	1	0	0	0	0	0	1
Oklahoma:									
Oklahoma City	(1)	0	1	0	2	0	1	0	5
Tulsa	124,478	0	0	1	0	0	0	1	0
Texas:									
Dallas	194,450	1	2	2	0	0	3	0	1
Galveston	48,375	0	0	0	0	0	0	0	3
Houston	164,954	0	1	4	0	1	4	0	2
San Antonio	198,069	0	1	5	0	0	2	1	2
MOUNTAIN									
Montana:									
Billings	17,971	0	0	0	0	0	0	0	0
Great Falls	29,883	4	1	0	0	0	2	0	0
Helena	12,037	0	1	0	0	0	0	0	0
Missoula	12,668	0	0	0	0	0	0	0	1
Idaho:									
Boise	23,042	0	0	0	0	0	0	0	0
Colorado:									
Denver	280,911	3	9	9	------	0	4	3	0
Pueblo	43,787	1	1	1	0	0	1	0	1
New Mexico:									
Albuquerque	21,000	0	0	0	0	0	0	0	0
Utah:									
Salt Lake City	130,948	8	2	3	0	0	0	2	2
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	0

1 No estimate made.

City reports for week ended July 30, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria: Cases, estimated expectancy	Diphtheria: Cases reported	Influenza: Cases reported	Influenza: Deaths reported	Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
PACIFIC									
Washington:									
Seattle	(1)	------	4	------	------	------	------	------	------
Spokane	108,897	------	0	------	------	------	------	------	------
Tacoma	104,455	3	2	1	0	0	4	0	2
Oregon:									
Portland	282,383	4	4	4	0	0	11	0	
California:									
Los Angeles	(1)	7	30	26	2	1	6	0	16
Sacramento	72,260	1	2	0	0	0	2	0	3
San Francisco	557,530	3	10	8	0	0	7	6	2

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
NEW ENGLAND											
Maine:											
Portland	1	0	0	0	0	0	0	0	0	2	16
New Hampshire:											
Concord	0	0	0	0	0	0	0	0	0	0	5
Manchester	0	0	0	0	0	2	0	0	0	0	14
Vermont:											
Barre	0	0	0	0	0	0	0	0	0	0	3
Burlington	0	3	0	0	0	1	0	0	0	0	3
Massachusetts:											
Boston	17	34	0	0	0	15	2	3	0	34	207
Fall River	1	0	0	0	0	3	1	0	0	1	25
Springfield	1	1	0	0	0	1	0	0	0	5	23
Worcester	1	5	0	0	0	3	1	0	0	0	36
Rhode Island:											
Pawtucket	0	1	0	0	0	0	0	0	0	0	11
Providence	2	3	0	0	0	2	0	1	0	4	43
Connecticut:											
Bridgeport	2	0	0	0	0	1	1	0	0	0	24
Hartford	1	2	0	0	0	2	0	0	0	4	34
New Haven	1	0	0	0	0	3	1	0	0	2	34
MIDDLE ATLANTIC											
New York:											
Buffalo	6	9	0	0	0	5	1	0	0	28	85
New York	36	41	0	0	0	[2] 88	29	18	3	143	1,151
Rochester	3	0	0	0	0	3	1	0	0	4	58
Syracuse	3	2	0	0	0	2	0	0	0	1	39
New Jersey:											
Camden	0	0	0	0	0	1	1	1	0	0	20
Newark	5	5	0	0	0	6	1	1	0	44	86
Trenton	0	0	0	0	0	4	1	1	0	1	28
Pennsylvania:											
Philadelphia	21	15	0	0	0	32	9	2	1	32	364
Pittsburgh	10	7	0	0	0	4	3	3	1	15	127
Reading	0	0	0	0	0	1	0	0	0	7	30
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	3	4	0	0	0	11	2	2	0	1	114
Cleveland	12	15	1	0	0	18	3	5	1	46	159
Columbus	2	3	1	0	0	3	1	0	0	6	69
Toledo	3	2	0	0	0	3	1	2	0	85	52

[1] No estimate made.

[2] Pulmonary tuberculosis only.

City reports for week ended July 30, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
EAST NORTH CENTRAL—contd.											
Indiana:											
Fort Wayne	0	0	0	0	0	0	0	1	0	2	21
Indianapolis	3	5	1	5	0	11	2	2	0	6	104
South Bend	0	0	0	0	0	2	0	0	0	3	24
Terre Haute	1	0	0	0	0	0	1	0	0	6	15
Illinois:											
Chicago	28	40	1	7	0	45	6	4	2	124	584
Springfield	1	2	0	0	0	3	0	0	0	0	13
Michigan:											
Detroit	26	27	3	0	0	25	5	2	2	103	230
Flint	2	15	0	2	0	2	1	0	0	3	18
Grand Rapids	3	2	1	0	0	3	1	0	0	3	38
Wisconsin:											
Kenosha	1	0	1	0	0	0	1	0	0	0	4
Madison	0	1	0	0	0	1	0	0	0	2	4
Milwaukee	8	9	1	0	0	6	0	0	0	19	93
Racine	1	3	0	0	0	1	0	0	0	16	7
Superior	1	5	1	0	0	0	0	0	0	0	8
WEST NORTH CENTRAL											
Minnesota:											
Duluth	3	4	1	0	0	1	0	0	0	4	19
Minneapolis	10	10	3	0	0	0	1	0	0	0	88
St. Paul	6	6	3	1	0	0	1	1	0	6	42
Iowa:											
Des Moines	1	2	0	2			0	0		0	
Sioux City	0	0	0	0			0	0		11	
Waterloo	0	0	0	0			0	0		1	
Missouri:											
Kansas City	2	2	0	1	0	5	2	2	0	8	88
St. Joseph	0	0	0	1	0	0	0	1	0	0	22
St. Louis	6	9	0	0	0	9	8	2	0	36	195
North Dakota:											
Fargo	0	2	0	0	0	0	0	0	0	11	8
Grand Forks	0	0	0	0			0	0		0	
South Dakota:											
Aberdeen	0	0	0	0			0	0		1	
Sioux Falls	0	6	0	0			0	0		0	
Nebraska:											
Lincoln	0	1	0	0	0	0	1	0	0	5	17
Omaha	1	5	1	0	0	2	0	0	0	1	32
Kansas:											
Topeka	0	0	0	0	0	0	0	0	0	10	13
Wichita	1	2	0	0	0	0	2	2	2	2	10
SOUTH ATLANTIC											
Delaware:											
Wilmington	0	1	0	0	0	1	0	0	0	0	14
Maryland:											
Baltimore	5	7	0	0	0	9	8	5	0	55	174
Cumberland	0	0	0	0	0	0	0	0	0	0	9
Frederick	0	0	0	0	0	0	0	0	0	0	5
District of Col.:											
Washington	3	9	0	0	0	13	4	3	0	9	126
Virginia:											
Lynchburg	0	0	0	0	0	1	1	0	0	0	10
Norfolk	0	1	0	0	0	3	2	1	0	2	
Richmond	2	2	0	0	0	5	2	1	0	0	43
Roanoke	0	0	0	0	0	0	1	0	2	4	14
West Virginia:											
Charleston	0	1	0	1	0	0	2	1	0	0	7
Wheeling	1	0	0	0	0	1	0	1	0	0	12
North Carolina:											
Raleigh	0	0	0	0	0	1	0	1	0	1	14
Wilmington	0	0	0	0	0	0	0	1	0	7	6
Winston-Salem	0	0	0	0	0	2	1	0	1	9	28
South Carolina:											
Charleston	0	0	0	0	0	0	2	0	0	3	2
Columbia	1	0	0	0			1	1		10	
Greenville	0		0				2				

City reports for week ended July 30, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
SOUTH ATLANTIC—continued											
Georgia:											
Atlanta	1	1	2	1	0	5	3	4	0	2	73
Brunswick	0		0				1				
Savannah	0	0	0	0	0	1	2	0	0	0	30
Florida:											
Miami	1	0		0	0	0		1	0	3	19
St. Petersburg	0	0	0	0	0	0	0	0	0	0	8
Tampa	0	0	0	0	0	0	0	1	1	0	25
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0		0				0				
Louisville	1	1	0	0	0	4	5	5	0	3	72
Tennessee:											
Memphis	0	4	0	0	0	6	7	3	1	0	70
Nashville	0	1	0	1	0	9	7	0	1	2	58
Alabama:											
Birmingham	2	1	1	1	0	4	5	14	2	3	64
Mobile	0	0	0	0	0	1	1	0	0	0	12
Montgomery	0	1	0	0	0	0	3	1	0	1	
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	0		0				0				
Little Rock	0	0	0	1	0	1	3	0	1	1	
Louisiana:											
New Orleans	1	3	0	0	0	10	4	4	1	1	129
Shreveport	0	0	0	0	0	1	1	0	0	1	27
Oklahoma:											
Oklahoma City	1	0	0	0	0	0	3	3	0	0	28
Tulsa	0	1	0	0	0	0	5	1	0	6	
Texas:											
Dallas	1	1	1	0	0	2	3	3	0	1	34
Galveston	0	0	0	0	0	2	0	0	0	0	18
Houston	1	1	0	2	0	5	2	2	0	0	45
San Antonio	0	1	0	0	0	5	2	2	0	0	58
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	0	0	0	0	9	2
Great Falls	0	1	0	0	0	1	1	5	0	0	10
Helena	0	1	0	0	0	0	0	0	0	2	10
Missoula	0	1	0	0	0	1	0	0	0	0	4
Idaho:											
Boise	0	1	0	0	0	0	0	0	0	0	11
Colorado:											
Denver	4	5	2	0	0	6	2	0	0	4	67
Pueblo	1	5	0	0	0	1	0	2	0	0	8
New Mexico:											
Albuquerque	0	0	0	0	0	7	0	3	0	2	9
Utah:											
Salt Lake City	1	3	1	3	0	1	1	0	0	23	34
Nevada:											
Reno	0	0	1	0	0	0	1	1	0	0	3
PACIFIC											
Washington:											
Seattle	3		2				0				
Spokane	1		2				0				
Tacoma	1	3	1	2	0	0	0	0	0	5	24
Oregon:											
Portland	2	2	6	4	0	4	1	0	0	3	86
California:											
Los Angeles	7	6	4	0	0	21	4	5	0	9	235
Sacramento	0	1	1	1	0	0	0	0	0	0	18
San Francisco	4	9	0	0	0	6	1	2	0	6	112

City reports for week ended July 30, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Boston	0	0	1	0	1	0	1	3	2
Fall River	0	0	0	1	0	0	0	0	0
Springfield	0	0	0	0	0	0	0	0	1
Rhode Island:									
Providence	1	0	0	0	0	0	0	0	0
MIDDLE ATLANTIC									
New York:									
New York	5	1	3	2	0	0	4	12	1
New Jersey:									
Newark	1	0	0	0	0	0	0	0	0
Pennsylvania:									
Philadelphia	0	1	0	0	0	0	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati [1]	0	0	0	0	0	0	0	2	2
Illinois:									
Chicago	2	1	0	1	0	0	2	4	1
Michigan:									
Flint	1	0	0	0	0		1	0	
Wisconsin:									
Milwaukee	3	0	0	0	0	0	1	1	0
Racine	1	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	0	2	0	0	0	0	0	0	0
Minneapolis	0	0	0	0	0	0	1	0	1
Iowa:									
Waterloo	1	1	0	0	0	0	0	0	0
Missouri:									
St. Louis	1	0	0	0	0	0	0	0	0
SOUTH ATLANTIC									
Maryland:									
Baltimore	0	0	0	2	0	0	1	0	0
Virginia:									
Norfolk	0	0	0	0	0	0	0	1	0
West Virginia:									
Wheeling	0	0	0	0	0	0	0	2	0
North Carolina:									
Wilmington	0	0	0	0	0	1	0	1	0
Winston-Salem	0	0	0	0	2	2	0	0	0
South Carolina:									
Charleston	0	0	0	0	2	0	0	0	0
Georgia:									
Savannah	0	0	0	0	0	1	0	0	0
Florida:									
Tampa [2]	1	1	0	0	0	0	0	0	0
EAST SOUTH CENTRAL									
Alabama:									
Birmingham	0	0	0	0	2	3	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	5	0	0	0
Louisiana:									
New Orleans	0	0	2	0	1	2	0	1	1
Shreveport [1]	0	0	0	0	0	1	0	0	0

[1] Rabies in man: Cincinnati, 1 case; Shreveport, 1 death.
[2] Typhus fever: Tampa, 2 cases, 1 death.

City reports for week ended July 30, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
WEST SOUTH CENTRAL—continued									
Oklahoma:									
Oklahoma City	0	0	0	0	0	0	0	1	0
Texas:									
Dallas	0	0	0	0	2	0	0	0	0
Houston	0	0	0	0	0	2	0	0	0
MOUNTAIN									
Montana:									
Great Falls	0	0	0	0	0	0	0	2	1
Utah:									
Salt Lake City	0	0	0	0	0	0	0	1	0
PACIFIC									
Oregon:									
Portland	1	0	0	0	0	0	0	0	0
California:									
Los Angeles	1	2	0	0	0	0	0	5	1
Sacramento	2	0	0	0	0	0	0	4	2
San Francisco	0	1	1	0	0	0	0	3	0

Summary of weekly reports from cities, June 26 to July 30, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927
101 cities	[2] 122	140	102	[3] 121	94	[4] 115	90	[5] 93	80	[6] 94
New England	64	88	57	91	78	132	33	63	40	91
Middle Atlantic	164	212	120	197	101	165	109	106	103	104
East North Central	117	119	106	102	110	93	98	108	83	102
West North Central	125	60	93	38	107	54	95	54	85	56
South Atlantic	82	143	65	85	32	83	34	[7] 87	20	[8] 90
East South Central	[2] 22	20	5	41	21	36	10	25	21	[2] 32
West South Central	47	122	43	[3] 52	26	[3] 73	39	[3] 129	39	[3] 73
Mountain	155	126	118	108	109	[9] 108	64	99	91	117
Pacific	129	76	179	86	158	113	174	65	118	[10] 121

MEASLES CASE RATES

	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927
101 cities	[2] 461	272	311	[3] 190	226	[4] 155	164	[5] 109	108	[6] 58
New England	318	341	245	299	179	241	108	197	83	169
Middle Atlantic	314	201	211	154	129	122	108	92	63	45
East North Central	739	206	481	182	412	110	279	90	191	47
West North Central	605	204	417	93	192	105	184	48	93	40
South Atlantic	432	447	291	277	201	221	127	[7] 141	114	[8] 70
East South Central	[2] 428	82	284	76	171	61	124	25	93	[2] 49
West South Central	52	151	47	[3] 116	17	[3] 108	13	[3] 56	9	[3] 52
Mountain	437	494	264	135	191	[9] 251	173	99	128	63
Pacific	458	775	335	539	327	448	212	280	121	[10] 65

For footnotes see page 2126

Summary of weekly reports from cities, June 26 to July 30, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

SCARLET FEVER CASE RATES

	Week ended—									
	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927
101 cities	[2] 170	128	127	[3] 99	94	[4] 83	82	[5] 64	73	[6] 63
New England	186	221	158	174	99	130	85	100	118	107
Middle Atlantic	188	149	129	123	73	91	75	50	52	39
East North Central	187	132	145	91	119	89	89	75	84	87
West North Central	270	89	206	91	186	71	127	79	143	79
South Atlantic	65	82	63	54	45	56	35	[7] 41	34	[8] 41
East South Central	[2] 66	56	52	16	52	31	93	31	62	[2] 43
West South Central	60	17	34	[3] 43	52	[3] 39	82	[3] 47	39	[3] 26
Mountain	91	208	55	117	91	[9] 197	64	99	36	153
Pacific	150	86	121	60	94	50	91	92	86	[10] 65

SMALLPOX CASE RATES

	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927
101 cities	[2] 11	18	7	[3] 16	7	[4] 9	6	[5] 10	5	[6] 5
New England	0	0	0	0	0	0	0	0	0	0
Middle Atlantic	2	0	0	0	1	0	0	0	0	0
East North Central	10	21	7	15	6	17	8	13	6	9
West North Central	26	38	28	34	26	14	14	12	4	6
South Atlantic	11	18	9	24	6	9	6	[7] 12	2	[8] 4
East South Central	[2] 38	36	0	51	5	25	10	36	21	[2] 11
West South Central	21	13	4	[3] 0	13	[3] 9	13	[3] 9	4	[3] 13
Mountain	55	63	9	45	9	[9] 72	27	117	9	27
Pacific	19	73	24	73	21	13	8	21	32	[10] 10

TYPHOID FEVER CASE RATES

	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927
101 cities	[2] 16	15	13	[3] 16	22	[4] 21	18	[5] 19	30	[6] 21
New England	12	7	9	14	12	19	9	16	14	9
Middle Atlantic	11	6	7	8	11	11	9	8	23	13
East North Central	5	5	5	5	6	8	6	9	10	11
West North Central	10	8	16	10	14	16	12	14	22	16
South Atlantic	35	22	43	34	58	43	47	[7] 50	54	[8] 37
East South Central	[2] 126	132	52	163	165	153	134	122	243	[2] 124
West South Central	13	75	30	[3] 17	56	[3] 52	30	[3] 47	47	[3] 47
Mountain	27	9	0	18	0	[9] 36	46	27	36	72
Pacific	21	16	13	10	21	8	8	16	11	[10] 24

INFLUENZA DEATH RATES

	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927
95 cities	[2] 6	3	4	[11] 3	4	3	3	[7] 3	2	[12] 3
New England	5	5	7	1	0	5	2	0	0	2
Middle Atlantic	7	2	1	4	4	2	2	4	1	4
East North Central	5	3	7	3	4	1	4	2	1	1
West North Central	8	2	0	0	0	2	2	2	0	0
South Atlantic	8	6	0	2	6	6	4	[7] 2	2	[8] 2
East South Central	[2] 0	0	16	15	21	5	5	15	5	[2] 11
West South Central	13	4	4	[11] 0	9	9	9	0	22	9
Mountain	9	9	0	0	9	18	9	9	0	0
Pacific	4	3	4	3	4	7	4	3	4	3

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.
[2] Covington, Ky., not included.
[3] Ft. Smith, Ark., not included.
[4] Ft Smith, Ark., and Dever, Colo., not included.
[5] Norfolk, Va , and Ft. Smith, Ark , not included.
[6] Greenville, S. C., Brunswick, Ga., Covington, Ky., Ft. Smith, Ark., Seattle, Wash., and Spokane, Wash., not included.
[7] Norfolk, Va., not included.
[8] Greenville, S. C., and Brunswick, Ga., not included.
[9] Denver, Colo., not included.
[10] Seattle, Wash., and Spokane, Wash., not included.
[11] San Antonio, Tex., not included.
[12] Greenvill, S. C., Brunswick, Ga., and Covingtan, Ky., not included.

Summary of weekly reports from cities, June 26 to July 30, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

PNEUMONIA DEATH RATES

	Week ended—									
	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927
95 cities	[2] 75	73	67	[11] 58	60	57	54	[7] 56	48	[12] 49
New England	92	60	54	60	57	56	33	56	33	49
Middle Atlantic	90	71	73	64	74	61	64	59	41	56
East North Central	61	80	65	49	46	45	47	55	47	42
West North Central	38	77	53	54	36	31	40	21	57	17
South Atlantic	89	57	72	59	55	63	57	[7] 75	51	[8] 43
East South Central	[2] 121	97	119	82	109	66	98	46	62	[2] 49
West South Central	53	73	53	[11] 86	79	69	53	65	71	86
Mountain	46	90	36	99	36	197	64	45	55	36
Pacific	42	60	53	55	46	97	35	72	71	79

[2] Covington, Ky., not included.
[7] Norfolk, Va., not included.
[8] Greenville, S. C., and Brunswick, Ga., not included.
[11] San Antonio, Tex., not included.
[12] Greenville, S. C., Brunswick, Ga., and Covington, Ky., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30, 443, 800	30, 966, 700	29, 783, 700	30, 295, 900
New England	12	12	2, 211, 000	2, 245, 900	2, 211, 000	2, 245, 900
Middle Atlantic	10	10	10, 457, 000	10, 567, 000	10, 457, 000	10, 567, 000
East North Central	16	16	7, 650, 200	7, 810, 600	7, 650, 200	7, 810, 600
West North Central	12	10	2, 585, 500	2, 626, 600	2, 470, 600	2, 510, 000
South Atlantic	21	20	2, 799, 500	2, 878, 100	2, 757, 700	2, 835, 700
East South Central	7	7	1, 008, 300	1, 023, 500	1, 008, 300	1, 023, 500
West South Central	8	7	1, 213, 800	1, 243, 300	1, 181, 500	1, 210, 400
Mountain	9	9	572, 100	580, 000	572, 100	580, 000
Pacific	6	4	1, 946, 400	1, 991, 700	1, 475, 300	1, 512, 800

FOREIGN AND INSULAR

CHOLERA ON VESSEL

Steamship "Adrastus"—At Yokohama, Japan—August 6, 1927.—Under date of August 6, 1927, a fatal case of cholera was reported on the British steamship *Adrastus* at Yokohama, Japan.

PLAGUE ON VESSEL

Steamship "Ransholm"—At Gefle, Sweden, from Rufisque, Senegal—August 5, 1927.—Information received August 9, 1927, shows the arrival, on August 5, of the steamship *Ransholm* at Gefle, Sweden, from Rufisque, Senegal, via Rotterdam, with three cases of plague among the crew. Plague was reported at Rufisque from May 23 to July 10, 1927.

ARGENTINA

Plague—January 1–June 30, 1927.—During the six months from January 1 to June 30, 1927, plague was reported in Argentina as follows:

Location	Date	Cases	Deaths
Province:			
Buenos Aires	Apr. 10–May 7	4	3
Cordoba	Jan. 11–Mar. 23	50	29
Corrientes	June 1	1	1
Entre Rios	Mar. 29–Apr. 3	2	1
Santa Fe	Apr. 28–May 16	4	3
Territory:			
Chaco—			
Barranqueras	May 29	2	2
Formosa	June 25	3	2
City.			
Rosario	May 7	1	1
Santa Fe	May 16	4	2

CANADA

Communicable diseases—Week ended July 23, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases from six Provinces of Canada for the week ended July 23, 1927, as follows:

Disease	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever		1	1				2
Lethargic encephalitis			1				1
Poliomyelitis			1				1
Smallpox			26		3	14	43
Typhoid fever	3	30	32				65

Communicable diseases—Quebec—Week ended August 6, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended August 6, 1927, as follows:

Disease	Cases	Disease	Cases
Chicken pox	3	Scarlet fever	29
Diphtheria	17	Tuberculosis	13
German measles	1	Typhoid fever	22
Influenza	1	Whooping cough	11
Measles	13		

Typhoid fever—Montreal—January 2–July 30, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	Apr. 23, 1927	125	43
Jan. 15, 1927	4	3	Apr. 30 1927	105	23
Jan. 22, 1927	1	2	May 7, 1927	108	19
Jan. 29, 1927	3	1	May 14, 1927	367	16
Feb. 5, 1927	1	0	May 21, 1927	770	26
Feb 12, 1927	0	0	May 28, 1927	353	38
Feb. 19, 1927	1	2	June 4, 1927	239	37
Feb. 26, 1927	1	1	June 11, 1927	128	36
Mar. 5, 1927	9	1	June 18, 1927	86	....
Mar 12, 1927	203	4	June 25, 1927	75	23
Mar 19, 1927	383	14	July 2, 1927	66	21
Mar. 26, 1927	568	22	July 9, 1927	52	10
Apr 2, 1927	649	48	July 16, 1927	39	4
Apr. 9, 1927	386	40	July 23, 1927	22	9
Apr. 16, 1927	175	38	July 30, 1927	23	10

CUBA

Malaria and typhoid fever—Provinces—July 1, 1926–June 30, 1927.—A summary of the cases of malaria and typhoid fever reported from the six Provinces of Cuba for the fiscal year 1926–27 is as follows:

MALARIA

Date	Pinar del Rio	Habana	Matanzas	Santa Clara	Camaguey	Oriente	Total
July 1–Sept. 30, 1926	77	314	16	16	461	883	1,767
Oct. 1–Dec. 31, 1926	22	355	34	54	2,659	2,538	5,662
Jan. 1–Mar. 31, 1927	18	206	14	22	1,374	3,296	4,930
Apr. 1–June 30, 1927	26	129	3	10	137	1,556	1,861
Total	143	1,004	67	102	4,631	8,273	14,220

TYPHOID FEVER

Date	Pinar del Rio	Habana	Matanzas	Santa Clara	Camaguey	Oriente	Total
July 1–Sept. 30, 1926	21	324	96	268	103	133	945
Oct. 1–Dec. 31, 1926	23	325	26	87	24	70	555
Jan. 1–Mar. 31, 1927	13	142	17	35	28	78	313
Apr. 1–June 30, 1927	49	277	52	130	26	109	643
Total	106	1,068	191	520	181	3[illegible]0	2,456

GRENADA

Vital statistics—Year 1926.—The number of births registered during the year 1926 was 2,402, as compared with 2,354 for 1925. There were 1,460 deaths registered, an increase of 298 over the previous year. The principal causes of death during 1926 will be found in the table below:

Cause of death	Deaths	Cause of death	Deaths
Brights disease	56	Old age	103
Cerebral hemorrhage, apoplexy	29	Premature birth and diseases of early infancy	89
Diarrhea and enteritis	400	Syphilis	66
Dysentery	20	Tuberculosis (pulmonary)	51
Malaria	84	Typhoid fever	7
Other organic diseases of the heart	104		

HAWAII TERRITORY

Rodent plague—Hamakua Mill, Hawaii—July 15, 1927.—A case of plague in a rodent was reported at Hamakua Mill, Hawaii, July 15, 1927.

ITALY

Communicable diseases—1925–1926 (comparative).—Cases of communicable diseases were reported in Italy during the years 1925 and 1926 as follows:

Disease	1925	1926	Disease	1925	1926
Anthrax	2,383	1,753	Pellagra		103
Cerebrospinal meningitis	581	582	Poliomyelitis	780	388
Chicken pox	9,045	9,399	Puerperal fever	2,110	1,678
Diphtheria and croup	15,383	14,923	Rabies:		
Dysentery (amebic)	644	522	Dog bites reported	9,415	8,622
Dysentery (bacillary)	2,046	1,742	Dogs found positive for rabies	163	165
Influenza	64,736	184,499	Scarlet fever	16,733	16,062
Kala-azar		263	Smallpox		[1] 112
Lethargic encephalitis	681	450	Typhoid fever	24,264	35,649
Malaria	283,109	220,602	Whooping cough	23,756	31,282
Measles	164,485	98,158			
Malta (undulant) fever	1,439	1,085			

[1] Type mild, varioloid included.

NOTE.—No case of cholera, plague, or yellow fever was reported during the year 1926.

JAPAN

Dysentery—Tokyo, city and district—Yokohama.—Dysentery has been reported in Japan as follows: Tokyo City, June 19 to July 9, 1927, 291 cases with 126 deaths; Tokyo district, exclusive of the city, cases, 443; deaths, 188. Yokohama, June 26–July 9, 1927, cases 11, deaths 3.

LIBERIA

Yellow fever—Monrovia—June 19–25, 1927.—During the week ended June 25, 1927, a fatal case of yellow fever was reported at Monrovia, Liberia, making a total from June 1, 1927, of four cases with four deaths.

MADAGASCAR

Plague—May 16-31, 1927.—During the two weeks ended May 31, 1927, 32 cases of plague with 27 deaths were reported in the Island of Madagascar. The occurrence was in the Provinces of Ambositra, Miarinarivo (Itasy), Moramanga, and Tananarive and was distributed as follows: Ambositra—cases, 7; deaths, 6 (bubonic); Miarinarivo (Itasy)—cases, 2; deaths, 2 (bubonic); Moramanga—cases, 4; deaths, 3 (bubonic 1, septicemic 3); Tananarive—cases 19, deaths, 16 (bubonic 9, pneumonic 8, septicemic 2).

SENEGAL

Plague—Yellow fever—July 20, 1927.—Under date of July 20, 1927, occurrence of plague and yellow fever was reported in Senegal, West Africa, as follows: *Plague*—Week ended July 17, 1927: Baol region—20 cases, 11 deaths; Dakar—16 cases, 10 deaths; Rufisque—25 cases, 17 deaths; Thies—3 cases, 2 deaths; Tivaouane—38 cases, 28 deaths. Total, 102 cases, 68 deaths. *Yellow fever*—At Thies, July 10, 1927, one death in a European arrived directly from Tivaouane; at Dakar, in the suburb of Ouakam, July 9, 1927, one suspect case.

TRINIDAD

Deaths, 1926.—During 1926, 8,496 deaths were registered on the Island of Trinidad, giving a death rate of 22 per thousand population.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the lists of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended August 19, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Swatow	June 26-July 2	5	4	
India:				
Rangoon	June 19-25	1	1	
Indo-China (French)	June 11-17	3	2	
Philippine Islands:				
Leyte Province—				
Barugo	June 29	1	1	
On vessel:				
Steamship Adrastus	Reported Aug. 6	1	1	At Yokohama, Japan.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Argentina:				
Province—				
Buenos Aires	Apr. 10-May 7	4	3	
Cordoba	Jan. 11-Mar. 23	50	29	
Corrientes	June 1	1	1	
Entre Rios	Mar. 29-Apr. 3	2	1	
Santa Fe	Apr. 28-May 16	4	3	

[1] From medical officers of the Public Health Service, American consuls and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended August 19, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Argentina—Continued.				
Territory—				
Chaco—				
Barranqueras	May 29	2	2	
Formosa	June 25	3	2	
City—				
Rosario	May 7	1	1	
Santa Fe	May 16	4	2	
Azores:				
Ribeira Grande	June 12-18	1		9 miles from port.
British East Africa:				
Kenya	May 29-June 4	7		
Nairobi	May 22-28	6		
Tanganyika (Territory)	do	1	1	
Uganda	May 15-June 4	92	67	
Egypt				Week ended July 8, 1927: One case, Jan 1-July 8, 1927: Cases, 45, corresponding period, 1926—cases, 160.
City—				
Port Said	July 13	1		Bubonic.
Province—				
Beni-Suef	July 6-13	4	2	Two localities.
Dakhalia	June 25-July 9	6	1	One locality.
Hawaii.				
Hamakua Mill	July 15			1 plague rodent.
India:				
Rangoon	June 19-25	3	3	
Iraq:				
Baghdad	May 1-28	9		
Java:				
Batavia	June 19-25	16	16	Province.
East Java and Madura	June 5-18	9	9	
Madagascar				May 16-31, 1927 Cases, 32; deaths, 27. Bubonic, 19; pneumonic, 8, septicemic, 5
Province—				
Ambositra	May 16-31	7	6	Bubonic.
Miarinarivo (Itasy)	do	2	2	Do.
Moramanga	do	4	3	Bubonic, 1; septicemic, 3.
Tananarive	do	19	16	Bubonic, 9; pneumonic, 8; septicemic, 2. Including Tananarive Town—Cases, 5; deaths, 3.
Senegal	July 11-17			Cases, 102; deaths, 68.
Baol	do	20	11	
Dakar	do	18	10	
Rufisque	do	25	17	
Thies	do	3	2	
Tivaouane	do	38	28	
On vessel				
Steamship Ransholm	Aug. 5	3		At Gefle, Sweden, from Rufisque, Senegal.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Canada:				
Alberta	July 17-23	14		
Manitoba—				
Winnipeg	July 31-Aug. 6	1		
Ontario	July 17-23	26		
Ottawa	July 24-30	9		
Saskatchewan	July 17-23	3		
Regina	July 24-30	1		
China:				
Hong Kong	June 19-25	1		
Do	June 26-July 2	2	1	
Manchuria—				
Changchun	July 3-9	3		South Manchurian Railway.
Dairen	June 6-12	1	1	
Harbin	June 20-26	1		
Kai-yuan	July 3-9	2		Do.
Mukden	do	2		Do.
Pensihu	do	1		Do.
Ssupingkai	do	1		Do.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended August 19, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Great Britain:				
England and Wales	July 10-16	156		
Italy				Year 1926. Cases, 112.
Poland	May 22-28	1		
Switzerland:				
Berne	June 26-July 2	1		

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Chile:				
Talcahuano	July 10-16		1	
Valparaiso	do	2		
Egypt.				
Alexandria	July 8-15	2		
Mexico·				
Mexico City	July 3-16	8		Including municipalities in Federal District

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Liberia:				
Monrovia	June 19-25	1	1	Total, June 1-25, 1927, cases, 4; deaths, 4
Senegal:				
Dakar	July 9	1		In suburb of Ouakam; suspect.
Thies	July 10	1	1	In European arrived direct from Tivaouane.

Reports Received from June 25 to August 12, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-28	1	1	
Kulangsu	June 21	1		
Shanghai	June 19-25	2		
Swatow	May 15-June 25	19	8	
India	Apr. 17-June 11			Cases, 48,780; deaths, 28,544.
Bombay	May 8-June 4	2	1	
Calcutta	May 8-June 18	396	247	
Karachi	May 29-June 4	1	1	
Madras	June 19-25	5	3	
Rangoon	May 8-June 18	14	10	
India, French Settlements in	Mar. 30-May 28	5	3	
Indo-China (French)	Apr. 1-June 20			Cases, 8,998.
Annam	do	1,147		
Cambodge	do	197		
Cochin-China	do	1,049		
Saigon	June 4-10	1	1	
Tonkin	Apr. 1-June 30	6,605		
Philippine Islands:				
Bulacan Province	June 7	1		At Mambog, Malalos.
Leyte Province—				
Carigara	June 23	1	1	Final diagnosis not received.
Palo	May 18	1		
Siam	May 1-June 18			Cases, 138; deaths, 74.
Bangkok	do	32	11	

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to August 12, 1927—Continued

PLAGUE

Place	Date	Cases	Deaths	Remarks
Argentina	Jan. 1-June 30			Cases, 71; deaths, 44.
Entre Rios	Reported Aug. 1	1		
Formosa	Reported July 6	3		
Pampa	do	2		
Azores:				
St. Michaels Island	May 15-June 3	2		
British East Africa.				
Kenya	Apr. 24-June 11	11	14	
Tanganyika	Mar 29-May 7		36	
Uganda	Jan. 1-Feb. 28	138	121	
Do	Mar 27-June 11	174	140	
Canary Islands.				
Laguna District—				
Tejina	June 17	1		
Ceylon.				
Colombo	May 1-June 11	13	8	Plague rats, 4.
Egypt	May 21-June 24			Cases, 6; deaths, 2.
Alexandria	June 4-10	1		
District—				
Biba	do	1		At Nana.
Beni-Souef	do	1		
Port Said	June 24	2	1	
Tanta District	June 4-10	1		
Greece	May 1-31	1	1	
Athens	June 1-30	1		Including Piraeus
Patras	May 30-June 11	4		
India	Apr 17-June 11			Cases, 21,204; deaths, 7,922.
Bombay	May 8-June 25	71	63	
Madras	May 1-June 11	86	33	
Rangoon	May 8-June 18	19	17	
Indo-China (French)	Apr 1-June 20	21		
Kwang-Chow-Wan	May 21-June 10	57		
Iraq.				
Baghdad	Apr 8-16	3	1	
Java				
Batavia	May 1-June 18	104	105	Province.
East Java and Madura	May 22-June 4	14	14	
Pasoeroean Residency	May 9			Outbreak reported at Ngadiwono.
Surabaya	Apr 17-May 7	24	24	
Madagascar				Mar. 16-Apr 30, 1927. Cases, 256; deaths, 135
Province—				
Ambositra	Mar. 16-May 15	63	58	
Antsirabe	do	8	8	
Miarinarivo (Itasy)	do	43	43	
Moramanga	do	14	14	
Tananarive	do	166	145	
Tananarive Town	do	15	15	
Peru	Apr-May 31			Cases, 22, deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	do	13	4	
Lima City	Apr. 1-30	5	1	
Senegal	May 23-July 10			Cases, 110; deaths, 53.
Baol	June 2-19	4	1	
Cayor Frontier	July 4-10	7	5	
Dakar	June 20-July 10	18	12	
Facel	July 6	17	8	
Guindel	June 20-26	11	2	
M'Bour	July 6-10	28	23	
Medina	June 13-19	2	2	
Pout	July 4-10	1		
Rufisque	May 23-July 10	79	53	
Thies District	do	21	7	
Tivaouane	June 2-July 6	12	4	
Siam	Apr. 1-June 11			Cases, 9; deaths, 7
Bangkok	May 8-June 11	2	1	
Tunisia	Apr. 21-May 31	131		
Turkey:				
Constantinople	May 13-19	1		
Union of South Africa:				
Cape Province—				
Maraisburg District	May 1-14	2	2	Native.
On vessel:				
S. S. Averoff	June 24-30	1		On Greek warship at port of Athens.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to August 12, 1927—*Continued*

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-June 10			Cases, 333.
Algiers	May 11-June 30	8		
Oran	May 21-July 10	32		
Brazil:				
Rio de Janeiro	May 22-June 25	5	5	
British East Africa.				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 29-May 7		22	
Zanzibar	Apr 1-30	7	2	
British South Africa:				
Northern Rhodesia	Apr. 30-June 24	58		Native.
Canada	June 5-July 16			Cases, 215.
Alberta	June 12-July 16	55		
Calgary	June 12-25	5		
British Columbia—				
Vancouver	May 23-29	2		
Manitoba	June 5-July 16			Cases, 14.
Winnipeg	June 12-July 15	12		
Ontario	June 5-July 16			Cases, 111.
Ottawa	June 12-July 23	55		
Toronto	June 19-July 23	9		
Quebec	do	13		
Saskatchewan	June 12 July 16	29		
Regina	July 17-23	1		
Ceylon	May 1-7			Cases, 3, deaths, 2.
China:				
Amoy	May 8-28	1		
Chefoo	May 8-14			Present.
Foochow	May 8-June 11			Do.
Hong Kong	May 8-June 18	13	14	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-June 25	4		
Dairen	May 2-22	6	4	
Fushun	May 15-June 5	9		
Harbin	June 13-19	1		
Mukden	May 22-June 25	3		
Ssupingkai	May 8-June 25	2		
Tientsin	May 8-28	11		
Chosen	Feb. 1-Apr. 30	354	84	
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr 1-30	1		
Curacao	May 29-June 4	1		Alastrim.
Egypt	May 7-June 17			Cases, 17; deaths, 3.
Alexandria	May 21-June 17	4	1	
Cairo	Jan. 22-Feb. 11	4		
France	Apr. 1-May 31			Cases, 128.
Paris	May 21-June 30	11	2	
Gold Coast	Mar. 1-Apr. 30	22	4	
Great Britain:				
England and Wales	May 22-July 9			Cases, 1,654.
Bradford	May 29-June 11	2		
Cardiff	June 19-July 2	4		
Liverpool	do	1		
London	May 15-June 18	2		
Newcastle on Tyne	June 12-July 2	2		
Sheffield	June 12-July 9	18		
Scotland—				
Dundee	May 29-July 2	5		
Guatemala				
Guatemala City	June 1-30		9	
Guinea (French)	June 4-10	9		
India	Apr. 17-June 11			Cases, 44,336; deaths, 11,199.
Bombay	May 28-June 25	136	92	
Calcutta	May 8-June 18	270	206	
Karachi	May 15-June 25	8	5	
Madras	May 22-July 2	14	5	
Rangoon	May 8-June 18	125	38	
India, French Settlements in	Mar. 20-May 21	145	88	
Indo-China (French)	Mar. 21-June 10	236		
Saigon	May 14-20	1	1	
Iraq:				
Baghdad	Apr. 10-16	2		
Basra	do	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to August 12, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Italy	Apr. 10-May 21	13		
Jamaica	May 29-June 25	9		Reported as alastrim.
Japan	Apr. 3-May 7	19		
Nagasaki City	June 20-July 10	21	5	
Taiwan Island	May 21-31	1		
Java:				
Batavia	May 22-28	1		
East Java and Madura	Apr. 24-30	1		
Latvia	Apr. 1-30	1		
Mexico:				
Durango	June 1-30		1	
La Oroya	Apr. 1-June 30			Present.
San Luis Potosi	May 29-July 16		7	
Tampico	June 1-10	1	1	
Morocco	Apr. 1-May 31	94		
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in two localities.
Pasir Residency	Apr. 30-May 6			Epidemic outbreak.
Samarinda Residency	May 21-27			Do.
Nigeria	Mar. 1-Apr 30	1,560	351	
Persia:				
Teheran	Feb. 21-Apr. 20		5	
Poland	Apr. 19-May 14	6		
Portugal:				
Lisbon	May 29-July 9	12	1	
Senegal:				
Medina	July 4-10	7		
Siam	May 1-June 18			Cases, 41; deaths, 11.
Bangkok	May 15-June 18	5	3	
Spain:				
Valencia	May 29-June 4	2		
Straits Settlements	June 12-18	3		
Singapore	Apr. 1-May 28	4	2	
Sumatra:				
Medan	June 5-11	2		
Tunisia	Apr. 1-June 10	10		
Tunis	June 1-10	1		
Union of South Africa:				
Cape Province—				
Elliott District	May 11-June 10			Outbreaks.
Kalanga District	do			Do.
Transvaal—				
Barberton District	May 1-7			Do.

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-June 10	263	29	
Algiers	May 11-June 30	24		
Oran	May 21-June 30	30		
Bulgaria	Mar. 1-May 10	151	14	
Sofia	June 4-10	1		
Chile:				
Concepcion	May 29-June 4		1	
Ligua	Mar. 16-31	2		
China:				
Manchuria—				
Mukden	May 29-June 4	1		
Chosen	Feb. 1-Apr. 30			Cases, 330; deaths, 30.
Chemulpo	May 1-31	[illegible]		
Gensan	do	1		
Seoul	Apr. 1-May 31	9		
Czechoslovakia				Apr. 1-30, 1927: Cases, 21.
Egypt	May 28-June 17			Cases, 79; deaths, 16.
Alexandria	May 21-July 1	8	3	
Cairo	Jan. 15-21	1		
Estonia	Apr. 1-30			Case, 1.
Greece:				
Athens	June 1-30		9	
Iraq:				
Baghdad	Apr. 24-30	1		
Irish Free State:				
Cork County	July 3-9	1		In urban district.
Latvia	Apr. 1-May 31	17		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to August 12, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Lithuania	Feb. 1-Apr. 30	121	17	
Mexico	Feb 1-28			Deaths, 26.
Mexico City	May 29 June 11	7		Including municipalities in Federal District
Morocco	Apr. 1-June 10	528		
Palestine	May 24-June 6			Cases, 3.
Haifa	do	2		
Mahnaim	May 17-23	1		In Safad District.
Safad	May 17-June 20	3		
Peru.				
Arequipa	Apr. 1-30		1	
Poland	Apr 10-June 4	822	80	
Portugal.				
Lisbon	May 29 June 4	1		
Rumania	Apr 3 May 14	687	47	
Tunisia	Apr 22-June 10	137		
Tunis	July 5-11	1		
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa	Apr. 1-30			Cases, 55, deaths, 8, native In Europeans, cases, 2.
Cape Province	Apr. 1 June 18	42	5	
Albany District	June 5-11			Outbreaks
East London	May 22-28	1		Do
Glen Grey District	May 1 7			
Qumbu District	do			Do
Natal	Apr 1-June 18	7	3	
Impendhle District	June 5 11			Do
Orange Free State	Apr 1 May 28	5		
Transvaal	Apr 1-30	1		
Yugoslavia	May 1-31			Cases, 4

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Dahomey (West Africa)				
Porto Novo	July 1	1	1	In Syrian woman
Gold Coast	Apr 1 30	8	5	
Liberia.				
Monrovia	May 29-July 8	4	5	
Senegal	May 27			Cases, 3.
M'Bour	May 27-June 19	5	5	
Ouakam	June 2-8	1	1	
Tivaouane	May 27-June 8	5	5	

TREASURY DEPARTMENT

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SPECIAL ARTICLES

Pollution and Natural Purification of the Illinois River

Smallpox Vaccination by the Pressure Method at Lehigh University

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1927

UNITED STATES PUBLIC HEALTH SERVICE

HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

Asst Surg Gen. C. C. PIERCE, *Chief of Division*

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PUBLIC HEALTH REPORTS

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A STUDY OF THE POLLUTION AND NATURAL PURIFICATION OF THE ILLINOIS RIVER

In pursuance of its policy in research investigations of stream pollution and natural purification phenomena, the United States Public Health Service, in cooperation with the Sanitary District of Chicago, instituted a study of the Illinois River, the field work of which was carried out during the years 1921–22. Surveys were made to ascertain the sources and amounts of polluting materials discharged into the stream, hydrographic features of the river and its main tributaries were ascertained, and laboratory observations were made over a period of about a year to determine the chemical, bacteriological, and biological condition of the river water throughout the stream length. The report on these features of the study has just been issued as Public Health Bulletin No. 171.

The natural drainage area of the Illinois River, comprising a total of 28,344 square miles, has been increased by the construction of the Chicago Drainage Canal, through which the combined sewage of Chicago, with dilution water diverted from Lake Michigan, is discharged into the headwaters of the river. Of a total population on the watershed of nearly 3,400,000, over 80 per cent, or approximately 2,800,000, thus contribute sewage through the canal. Industrial waste pollution amounting, in terms of population equivalents, to about 67 per cent of the total of the watershed, originates from the same source. The volume of flow of the Chicago Drainage Canal, averaging 8,650 second-feet during the period of the field studies, amounted to over 30 per cent of the mean discharge of the river at a point 23 miles above its mouth. The proportionately large and relatively constant volume of water discharged into the headwaters of the river has the effect of stabilizing its velocity of flow to a marked extent.

For observing progressive changes in the chemical and bacterial content of the river water throughout the stream length, sampling stations were located at intervals not exceeding 25 miles apart, samples being collected and examined from each station three or six times each week. The samples were examined at four laboratories located, respectively, at Joliet, Peoria, Beardstown, and Kampsville.

The observations, including those of turbidity, alkalinity, dissolved oxygen, oxygen demand, and bacteriological tests (including plate counts at 20° C. and 37° C. and *B. coli* index), were made on all individual samples collected. Sanitary chemical analyses, including oxygen consumed and nitrogen in its various forms, were made of composited samples preserved with sulphuric acid. From selected points, samples of river water and of bottom sediment were collected and examined regularly for plankton content.

From the sanitary chemical analyses it is estimated that 7 to 8 per cent of the water flowing into the Illinois River through the Chicago Drainage Canal is sewage, 93 to 92 per cent being dilution water. The total nitrogen content of the river water appears to remain fairly constant throughout the year. No nitrates appear to be produced above Peoria, especially in the summer. In general, the progressive changes observed in the nitrogenous constituents of the water were not sufficiently great to be significant. The oxygen relationships, which provide a more sensitive index of conditions related to nuisance causation, will be discussed in a later report.

The numbers of bacteria in Illinois River water and their progressive changes, which provide an extremely sensitive index of the sanitary condition of the water and of its rate of natural purification, were studied in considerable detail, both from the viewpoint stated and from that of comparing the rates of bacterial change observed in this stream with those previously observed in the Ohio River, under various seasonal and other physical conditions.

These observations, continued throughout an entire year, have supplied sufficient information to permit evaluating the excessive bacterial pollution of the river by the wastes of Chicago. The density of bacteria is reduced very rapidly in the upper reaches of the river and, progressing downstream, at slower rates until at Peoria the average numbers growing on agar seldom exceed 4,000 per c. c. in summer and 2,000 per c. c. in winter. Pollution contributed by the Peoria district again imposes a considerable bacterial load on the stream, likewise tending to diminish at subsequent downstream points, until, at the mouth, the bacterial content of the Illinois compares quite favorably with that of the Mississippi River at the junction.

The rates at which the bacteria decrease are dependent on seasonal temperatures, being much more rapid in summer than in winter. When necessary corrections are made for pollution added by tributaries and intermediate cities, these rates are quite well defined by the observational data and may be represented, in general, by smooth curves fitted to the observations and plotted with respect to the time of flow elapsing between successive sampling points. Such curves, though having the same general characteristics as those

found to fit similar observations made on the Ohio River, are yet distinctive in that the initial rates of decrease are more precipitous as a rule. However, when the differences in initial bacterial concentrations are taken into consideration and the curves adjusted for this condition, they are more nearly comparable.

Public Health Bulletin No. 171, containing the detailed report, may be purchased from the SUPERINTENDENT OF DOCUMENTS, Government Printing Office, Washington, D. C., at 50 cents per copy.

SMALLPOX VACCINATION BY THE PRESSURE METHOD AT LEHIGH UNIVERSITY [1]

As the result of a smallpox scare at Lehigh University in February, 1924, a rule was adopted requiring every student who matriculated at the university to be vaccinated by the Students' Health Service, unless he had been successfully vaccinated within the past three years. * * *

In the fall of 1924 vaccination was offered but not required and the technique which we called "jennerian" was developed. This technique is practically that which was recommended by the United States Public Health Service and the Medical Department of the United States Army. * * *

In September, 1925, the university vaccination requirement became effective, and it was necessary to vaccinate more than 1,000 students. The jennerian technique had seemed satisfactory and this was followed in the majority of cases. * * *

The results obtained during the scholastic year 1924–25 were discussed with the officials of the United States Public Health Service. Here we encountered the natural criticism of the use of any dressing following vaccination. It was mainly to overcome this objection that we tried out, in a limited number of cases, the "pressure" method suggested by Dr. J. P. Leake, surgeon, United States Public Health Service. Doctor Leake's directions are as follows:

THE PRESSURE TECHNIQUE

A simple method is a shallow, tangential pricking of the cleansed but not irritated skin with a needle, through a drop of smallpox vaccine, covering an area not greater than one-eighth inch (3 mm.) in diameter. This gives little chance of accidental infection, and the eruption is typical. The needle, which should be new, sharp, and sterile, is not thrust into the skin, but is held quite parallel with or tangential to it, with the forefinger and middle finger of the right hand above the needle and the thumb below, the needle pointing to the

[1] Excerpts from a paper on "The Pressure Vaccination Technic," by Stanley Thomas, M. S., Associate Professor of Bacteriology, Lehigh University, and R. C Bull, M. D., Director, Students' Health Service, Lehigh University, Bethlehem, Pa., published in the Journal of the American Medical Association, Vol. 88, No. 24, June 11, 1927, pp. 1879–1881.

operator's left. The needle should be crosswise of the arm, so that the thumb of the operator is not impeded by hitting the skin. The side of the needle point is then pressed into the drop about thirty times within five seconds, the needle being lifted clear of the skin each time. This rapid to and fro motion of lifting the needle and pressing it against the skin should be quite perpendicular to the skin and needle and not in the direction of the needle. In this way the elasticity of the skin will pull a fraction of an inch of the epidermis over the point of the needle at each pressure so that the vaccine is carried into the deeper layer of epithelial cells where multiplication takes place most easily. If the skin has not been unduly rubbed in cleansing, and if the motion is entirely perpendicular to the needle, no signs of bleeding will occur and all evidence of the punctures will fade out in less than six hours. Immediately after the punctures have been made, the remaining virus is wiped off the skin with sterile gauze and the sleeve is pulled down, the whole operation of puncturing and wiping taking less than 10 seconds. With strong vaccine a single pressure not infrequently gives a "take." Only six pricks or punctures were formerly advocated. Comparative tests showed this to be inferior to the scratch method in the percentage of successful "takes." By the use of 30 pricks, this difficulty has been overcome and the percentage of "takes" is as high as with any other safe method.

The disadvantages of this method, which it shares with some other methods, are, first, that without demonstration and practice the technique of applying the proper pressure may not easily be acquired, and, second, that without due care an area larger than one-eighth inch (3 mm.) in diameter may be covered by the insertion. In regard to the first point, the difficulty is usually that the needle is not pressed in the right direction or that the pressure is not firm enough. Provided the needle is held quite tangential to the curve of the arm, and the direction of motion is quite perpendicular to the needle, it is difficult to make the rapid pressure too firmly. In regard to the second point, motion from the wrist with the arm held rigid is usually more accurate than whole-arm motion.

The advantages of the method are its mildness and painlessness, the fact that it is more rapid than any other effective and safe method, the fact that no control site is necessary, since the evidence of trauma due to the operation has disappeared before the first observation for an early reaction is made, and the fact that the virus is wiped off immediately, so that the uselessness of a dressing is obvious to the person vaccinated.

The foregoing method is known by us as the pressure technique, and the fact that they were vaccinated by this method was noted on the men's vaccination record cards. As we had gotten very satisfactory results by our "jennerian" technique we were loathe to depart from it and therefore used the new technique in the vaccination of every tenth man only.

It became apparent immediately that the "pressure" technique had the practical advantage of saving considerable time. In the "jennerian" method the care necessary to avoid drawing blood, to make the degree of trauma the same in all three incisions, to rub in the virus, and to apply the dressing, took nearly 45 seconds for each man. By the "pressure" technique a man was vaccinated and on his way in less than one-fourth of this time. Moreover, the obvious ease of the method from the point of view of both the operator and the person being vaccinated was apparent to those

vaccinated, and it was not unusual to have men standing in line ask to be vaccinated by what they called the "new method."

It was not until we tabulated the results of nearly a thousand vaccinations that we could draw a comparison of the efficacy of the "jennerian" and "pressure" methods. Table 1 shows the comparative results obtained by these two different methods of vaccination.

TABLE 1.—*Comparative results of "jennerian" and "pressure" methods of vaccination*

	"Jennerian"		"Pressure"		Total	
	Number	Per cent	Number	Per cent	Number	Per cent
Immune reactions	576	65.6	71	66.4	647	65.7
Vaccinoid reactions	200	22.8	24	22.4	224	22.7
Vaccinias	102	11.6	12	11.2	114	11.6
Total	878	100.0	107	100.0	985	100.0

CONCLUSIONS

1. Of the methods employed by us for vaccination against smallpox, the pressure technique has been shown to be as efficacious as any other in inducing vaccinias in susceptible persons.

2. The pressure technique has the advantage of saving time in vaccinating a large number of persons in a short time.

3. The pressure technique overcomes the objection to the use of a dressing following vaccination and makes the dressing or shield obviously unnecessary.

4. The pressure method is more desirable from the point of view of the vaccinated person.

From these results it is our intention to adopt the pressure technique as the sole method of compulsory vaccination at Lehigh University. At the opening of college next September it will be necessary to vaccinate about 500 students. The time allowed in the schedules for the work is two hours. With sufficient clerks to make the records, two operators will easily accomplish this, using the pressure technique.

(EDITORIAL NOTE.—The pressure technique was demonstrated by Doctor Leake, as part of the scientific exhibit of the United States Public Health Service, at the meetings of the American Medical Association, in Washington, D. C., May 16–20, 1927.)

REGISTRATION OF STILLBIRTHS IN GREAT BRITAIN

The British Ministry of Health has recently issued a circular addressed to the local authorities calling attention to the births and deaths registration act of 1926, which went into effect July 1, 1927, especially to that part of the act which pertains to the registration of stillbirths.

The act requires that, when a stillbirth is registered, the relatives giving information must either (1) deliver to the registrar of births and deaths a written certificate that the child was not born alive, signed by a registered medical practitioner or certified midwife who was in attendance at the birth or who examined the body of the infant; or (2) must make a declaration in the prescribed form to the effect that no registered medical practitioner or certified midwife was present or examined the body or that his or her certificate can not be obtained, and that the infant was not born alive.

When such certificate is not obtainable and the case is called to the attention of the local health authorities, the medical officer of health is instructed to investigate and inform the registrar. In view of the fact that it is undesirable to register stillbirths on the relatives' declarations only, the local authorities are requested to notify midwives of the importance of giving the relatives the prescribed certificate in every case in which they attend, if no such certificate was procured from a registered medical practitioner.

A stillborn infant may not be buried in a burial ground until a certificate of registration of the stillbirth has been obtained from the registrar.

For the purposes of the act, stillbirth is defined as follows:

> "Stillborn" and "stillbirth" shall apply to any child which has issued forth from its mother after the twenty-eighth week of pregnancy and which did not at any time after being completely expelled from its mother breathe or show any other signs of life.

INDUSTRIAL MEDICINE CLINIC AT McGILL UNIVERSITY

At the opening of the next academic year at McGill University there will be established a new clinic in industrial medicine at the Montreal General Hospital under the direction of the faculty of medicine of McGill University. This clinic will serve as a training school for physicians in industry, take charge of industrial accidents and diseases, and will educate men to direct health services as well as to supervise the care of men in factories, department stores, and industries in general.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Garbage Collection. W. H. Taylor, Norfolk, Va. Seventh National Conference, International Association of Street Sanitation Officials, January 10–11, 1927, pp. 22–35. (Abstract by J. L. Robertson.)

This article deals with the routing of collection equipment after a study of collections had been made.

For collections the city is divided into two sections, and in each section collections are regulated and supervised by foremen. Wagons or trailers, hauled by horses or mules, are used in the business sections, because of narrow streets; in other sections, collections are made by trucks and trailers. A system of "spotting" trailers is used, and tractors are used to carry empties to designated points and pick-up loaded trailers. In some sections the collections of waste paper are made by specially built wagons.

New 800-ton Incinerator for Los Angeles, Calif. Anon. *Western Construction News*, vol. 2, No. 7, April 10, 1927, pp. 51–52. (Abstract by E. A. Reinke.)

An 800-ton Nye odorless garbage incinerator is under construction in Los Angeles. It will be used for unsalable rubbish. Garbage is now being sold for hog feed for 60 cents per ton, f. o. b. cars. Domestic noncombustible refuse is also sold for recovery of tin and pressing scrap steel for sale to steel works. Various other materials such as bottles are sold, and all dead animals are sold to fertilizer works. The new plant will handle all unsold material.

The 800-ton capacity is based on 24 hours' operation. The total cost is $370,000. Guaranteed capacity is 65 per cent by weight of garbage consisting of market refuse, and 35 per cent by weight of rubbish. Furnaces or retorts are of the beehive type, with two connected to a common flue and stack. Air for combustion is taken from a preheated duct paralleling the flue.

The New Refuse Disposal Plant in Buffalo, N. Y. Joseph H. Nichols. *The American City*, vol. 36, No. 3, March, 1927, pp. 303–306. (Abstract by Charles R. Cox.)

A 500-ton Heenan incinerator plant was placed in use recently in Buffalo. The building is constructed to allow the wagons and trucks to pass through the plant without turning. Two 3½-ton electric traveling cranes, equipped with 2-cubic-yard clamshell buckets, transfer the refuse from the receiving bin to the charging hoppers. The five Heenan furnaces are fitted with grates having a dumping section. The ashes are dumped into the ash pits, from which they are removed to the ash tunnel by an attendant. The dust nuisance in the stoking room is thereby eliminated. Dead animals may be introduced into the combustion chamber through a door provided for the purpose. Forced draft of preheated air insures the maintenance of combustion temperatures of 1,800° F.

International Health Yearbook, 1925. Report of the League of Nations Health Organization. Malaria. (Abstract by A. L. Dopmeyer.)

Bulgaria.—There were 13 malarial districts in 1925, 14 per cent of the population of which were noted to have malaria. Ninety-one thousand nine hundred and ninety-seven blood tests were made, 30 per cent of which gave positive results. Population of the districts was 661,756. The death rate from malaria in the districts was 4 per 10,000. *Anopheles maculipennis* was observed in 95 per cent of the cases. Twelve thousand liters of petroleum were used on stagnant waters. Next year petroleum will be replaced by Paris green. Eighteen hundred square meters of wire netting were used for protecting dwellings. Attempts to destroy mosquitoes in winter were made with poor results, due to lack of experience and propaganda. The morbidity among persons having taken quinine as a preventive measure was 8.5 per cent as compared with 28 per cent among other persons.

Italy.—A table shows the number of deaths and the death rate per million from 1887 to 1923. The maximum death rate is 710 per 1,000,000 population, for 1887, and the minimum 57, for 1914. The figure for 1923 is 87, but there is apparently an increase over this in 1924, the figure not being given.

The distribution of quinine is now being handled by the Provinces instead of the communes. The control of the trade in quinine and in various pharmaceutical remedies against malaria has been made more stringent. The suggestion that secondary alkaloids of cinchona bark be used in the treatment and prophylaxis of malaria is under consideration. A survey of all *Anopheles* foci in the Provinces of Sicily and Sardinia is being undertaken.

Netherlands.—The destruction of larvae by paraffining the ditches has been carried out on a large scale at Alkmaar and Amsterdam. The Scientific Commission is of the opinion that this process is not to be recommended for low-lying country. The commission states that its work was hindered by the sale of quinine pills and tablets by druggists, grocers, etc.

Poland.—An investigation was made by the State Institute of Hygiene in certain places which were considered to be very malarious, in order to collect data concerning the incidence of malaria. The investigation comprised the determination of the spleen rates and the detection of carriers of the malaria parasite. Out of 11,200 children examined, 9.47 per cent had enlarged spleen. Of 1,342 blood specimens, 11.62 per cent were infected with plasmodium vivax.

Rumania.—During 1925 there were 164,262 cases of malaria recorded. Experiments to determine the efficacy of the alkaloids of quinine have been carried out, as have also experiments with stovarsol. Increase was noted in the practice of systematically administering preventive doses of quinine to the frontier guards and gendarmes of the malarial districts, particularly on the frontiers exposed to inundations.

Union of Socialist Soviet Republics.—The Russian Federal Republic has 124 antimalaria stations and the Ukraine 29. The Union purchased 75,000 kilograms of quinine, and the health organizations have published large quantities of popular literature on the subject of malaria.

United States of North America.—The only development relating to the prophylaxis of malaria in 1925 is the increased use of quinine as a curative rather than a prophylactic measure. The most important development for combating malaria is the perfection of methods for the use of Paris green as a larvicide. An improvement in oil-spraying apparatus was made by the use of an air tank attached to the oil tank. An air pressure of 250 pounds can be developed.

The important activities of the individual States are: (1) The organization of county health units in the South and the development of interest by the county health officer in the malaria problem; (2) the improvement in the collection of malaria statistics.

A New Means of Combating Anopheles in Italy: An Account of the Acclimatization and Progress of Gambusia. Dr. Maximus Sella. Extrait du Compte Rendu du premier Congrès International du paludisme. Rome, 1926. 16 pages. (Abstract by S. F. Hildebrand.)

The author gives a review of the value of indigenous fishes as eradicators of mosquito larvæ and concludes: "For my part I am perfectly convinced that there do not exist any fishes of our own country (or probably in southern Europe) which can be employed efficaciously in the antimalaria fight." Then reference is made to the arrival of "some hundreds" of *Gambusia,* in 1921, at Madrid, Spain, which had been shipped from the United States (U. S. Fisheries Station, Edenton). The fish were placed in a pond near Madrid, and a year later this pond and the communicating streams were "crowded" with *Gambusia.* Two or three hundred were then transferred to Italy, arriving in Rome in 1922. These

fish were divided into four lots. They multiplied rapidly, and the following April the effects became evident, for "the Lago di Porto, which had been swarming with mosquito larvae in previous years, now only rarely presented a specimen."

Gambusia multiplied and invaded canals and other waters. It is reported that they have been liberally distributed over many parts of Italy, and they have been introduced from Italy directly, or indirectly, into Germany, Russia, and Yugoslavia. The opinion is expressed that *Gambusia* multiply more rapidly in Italy than in the place of their origin—the United States.

The author says: "After four and three years, respectively, from the time of importation of *Gambusia* in Spain and in Italy, we have to thank the United States for the precious gift which they have made us, the value of which we no longer doubt." The conclusions are that complete mosquito control is obtainable, if there is complete control of vegetation. Vertical vegetation leaves to *Gambusia* the possibility of complete destruction. Horizontal vegetation often prevents complete control. The relative degree of control in the presence of such vegetation, however, depends on the number of fish present. In some extensive zones not a drop of petroleum has been used, yet the mosquitoes have been reduced to a minimum this year (1925), something never before obtained."

A reduction in malaria incidence also is reported. The author concludes: "The results of this initial period warrant, therefore, the affirmation that, in *Gambusia*, Italy acquired a new means for the reduction of the larvae of the *Anopheles*."

The Tsetse Fly-belt Area in the Nuba Mountains, Province of the Sudan. R. G. Archibald. *Annals of Tropical Medicine and Parasitology*, vol. 21, No. 1, March 25, 1927, pp. 39-43. (Abstract by A. H. Wieters.)

The article briefly describes a tsetse-fly belt area in the Koalit Hills of the Nuba Mountains Province, which is the most northern tsetse-fly belt in the Sudan.

The infested area is very small, and to the south are vast areas free from flies. The fly is not generally distributed in the hills. They appear to be independent of water and apparently depend upon the domestic stock for their main food supply.

No cases of human trypanosomiasis have been recorded from this district, although there is some trypanosome infection among the stock of the hills.

Study of Effects of Disinfection of Sewage with Chlorine. Roy J. Morton. Unpublished thesis, University of Harvard, June, 1926. 71 pages, typewritten manuscript. (Abstract by J. K. Hoskins.)

The literature on chlorine disinfection of sewage is reviewed in this paper and certain topics are reinforced with experimental data, the results of which are discussed in some detail.

The nature of the process of chlorine disinfection is first briefly described, after which the following subjects are taken up in order: (1) Disappearance of free chlorine in water and sewage; (2) methods of determining amounts of excess chlorine in sewage; (3) effect of chlorine in reducing the bacterial content of sewage; (4) effect of chlorination upon stability and nuisance from odor and flies; and (5) effect of chlorination upon the biochemical oxygen demand of sewage.

The rate of disappearance of chlorine varies in different sewages and waters. A measure of the amount of excess chlorine present in a chlorinated effluent after a stated period of contact would therefore seem to be advisable, because the efficiency of disinfection is dependent upon the amount of residual chlorine. Methods for determination of excess chlorine are discussed, but no entirely satisfactory procedure is available.

The amount of chlorine necessary for disinfection depends on many factors, such as season of year, nature of sewage, whether crude, clarified, fresh, or septic, etc. Generally the dose varies from about 3 to 18 p. p. m. For disinfection, a residual of 0.5 p. p. m. of chlorine after 30 to 60 minutes' contact is required to effect a reduction of 90–99 per cent in the bacterial content. After the residual chlorine has disappeared or the effluent has been diluted, the bacterial content increases rapidly for from 24 to 72 hours and to a higher maximum than obtained in the untreated sewage. *B. coli* does not share in this increase to the same extent as the plate counts.

Considerable study was devoted to the effect of chlorination on the oxygen demand of sewage. In general, the results indicated that chlorination tended to reduce somewhat the 10-day oxygen demand.

Observations of Sewage Disposal Plants in England. S. W. Freese. Proceedings of the Ninth Texas Water Works Short School, Texas Section, Southwest Water Works Association, pp. 349–352. (Abstract by Chester Cohen.)

The plain sedimentation sprinkling filter method of sewage treatment plant appears to be the most standard type in England. The removal of the sludge with "fiddler scrapers" permits the disposal of the sludge onto the land or into separate sludge digestors. Where sprinkling filters are used, the distribution is accomplished usually through traveling distributing pipes on square beds or rotating pipes on round beds. Since 1915 the activated sludge type for sewage purification has almost completely replaced all other types for new projects or additions to old plants. The different processes of activated sludge and bio-aeration or mechanical activation are explained, and examples of each are given, together with the operating and design problems that influence the design in different cases.

The Sewage Treatment Works, Wichita Falls, Tex. Julian Montgomery. Proceedings of the Ninth Texas Water Works Short School, Texas Section, Southwest Water Works Association, pp. 294–297. (Abstract by Chester Cohen.)

The sewage-treatment works now being constructed at Wichita Falls consist of a river siphon, a pump station, screen and grit chamber, four Imhoff tanks, sludge drying beds, dosing tanks, trickling filters, and a final settling tank equipped with Dorr clarifier. The installation is designed to handle about 3,000,000 gallons of domestic sewage per day, which allows for liberal future increase in the present average flow of 1,750,000 gallons per day. Three automatically controlled Wood trash pumps of one, two, and three million gallons per day capacity, respectively, are used. A 23-foot screen chamber, with movable bar screen spaced with one inch openings, is provided. The Imhoff tanks are designed to give a normal retention period of two hours, and the sludge digestion chamber is designed to allow 2 cubic feet of sludge capacity per person. An arrangement of perforated cast iron pipe for agitation of the sludge is provided in the digestion compartment, and a surface sprinkling arrangement to remove scum, grease, and trash from the settling chamber is part of the system. A gas vent area of 21.6 per cent of the total area has been provided, and the ratio between square feet of gas vent area and the cubic feet in the sludge digestion chamber is 0.013. Sludge drying bed area equals one square foot per three persons. The cycle on the sprinkling filter for average flow is expected to be four minutes and nine seconds, and the resting period nine minutes. Sprinkling filter beds will be 8 feet deep, and the dosing rate will be 2 m. g. per acre per day, or 4,000 contributing population per acre foot. The final settling tank provides a retention period of one hour, and settled sludge removed by the Dorr clarifier will be returned to the pump sump to be mixed with incoming sewage.

Chlorination reduces foaming in Imhoff tanks. Chester Cohen. *Engineering News-Record*, vol. 98, No. 14, April 7, 1927, pp. 563–564. (Abstract by H. V. Pedersen.)

This article describes the results of a number of chlorine experiments made in connection with the sewage-treatment plant at Lufkin, Tex. The Imhoff tanks at Lufkin had been foaming in an uncontrollable manner, and the hydrogen sulphide gases evolved had brought many complaints from nearby residents. In an effort to bring the action of the tanks under control, the State Department of Health of Texas, in cooperation with the Chlorine Institute of New York City, experimented with chlorine. Liquid chlorine at the rate of 20 p. p. m. was first applied to the influent of the tanks, with the result that foaming was reduced very rapidly. The chlorine dosage was then reduced to 6 p. p. m., with equally as good results. Finally it was decided that foaming could be prevented with a chlorine dosage of 3 p. p. m. applied during the period from 8 a. m. to 5 p. m. daily.

In an effort to reduce the cost, lime was applied to the sludge and scum in the vents. This experiment failed. An attempt was also made to apply liquid chlorine direct to the tank through the gas vents, but this experiment also failed. Prechlorination of the raw influent seems to be the chief factor of success.

The experiments proved that foaming in Imhoff tanks can be prevented by prechlorination without affecting the final results of the plant. Odors from hydrogen sulphide gas around both tank and filter can also be greatly reduced to nominal cost by prechlorination.

Milk for Health and Wealth. R. G. Upton. Pamphlet. (A discussion of the proper methods of milk production as required by the milk ordinance of the City of Nacogdoches, Tex.) 25 pages. (Abstract by Arthur P. Miller.)

This pamphlet is a running series of questions and answers having as a basis the United States Public Health Service standard milk ordinance. It is well prepared and unquestionably will hold the attention when used in an educational program.

Report of the United States Public Health Service on the Montreal Typhoid Fever Situation. Mimeographed report.[1] 16 pages and 2 charts. (Abstract by Arthur P. Miller.)

As the result of a comprehensive 11-day survey of the Montreal typhoid fever situation, the board of officers, comprised of three surgeons and one sanitary engineer, concluded their report with the following: (1) The typhoid fever epidemic in Montreal, Canada, since February 15, 1927, was beyond reasonable doubt caused by infection distributed in the output of milk from the plant of the Montreal Dairy Co. (Ltd.) in that city; (2) though contributory infection may have been introduced into the milk at one or more of the four stations or within the plant in Montreal, the preponderance of evidence is that the bulk of the infection was introduced into the milk at the farm sources and was enabled to multiply before the milk reached the city plant; (3) though it was barely possible for a very small proportion of whatever infection was in the milk to pass through the Pasteurization machine without being heated long enough and at a high enough temperature to be destroyed, the preponderance of evidence is that a very considerable proportion of the infected milk was passed through and distributed from the plant without being subject to Pasteurization treatment; (4) a large proportion of the milk which at the beginning of the epidemic was distributed through the plant of the Montreal Dairy Co. (Ltd.), and which is now presumably being distributed through other plants or channels to consumers in Montreal and elsewhere, is not now being officially controlled in such manner

[1] Also published in Public Health Reports, vol. 42, No. 29, July 22, 1927.

as to preclude its possible menace to the public health; (5) Montreal is not yet a comparatively safe city for visitors, who are likely to be susceptible to typhoid fever infection; (6) milk and milk products derived from sources within the general vicinity of Montreal do not appear to be produced or processed under satisfactory sanitary conditions nor under official health supervision approaching adequacy.

Two recommendations were made as the final result of the investigation. They were as follows: (1) That State and local health officials and other persons concerned be advised that Montreal is not now, from a typhoid fever standpoint, a comparatively safe city for tourists from the United States to visit and is not likely to be such for months to come, unless local health service in the city of Montreal and the vicinity thereof is promptly made much more nearly adequate than it now is; (2) that such steps as may be necessary be taken to encourage or bring about under proper official supervision radical improvement in sanitary conditions under which milk and milk products are produced, handled, or processed in the city of Montreal or any other place in the Province of Quebec within a radius of 100 miles of the city of Montreal for export to the United States; and that such milk or milk products after reaching points to which shipped in this country and before being distributed to consumers be Pasteurized or otherwise processed under official supervision so as to be rendered free from typhoid, tuberculosis, or any other infection likely to endanger human health.

AMERICAN PUBLIC HEALTH ASSOCIATION MEETS AT CINCINNATI, OCTOBER 17-21

The fifty-sixth annual meeting of the American Public Health Association will be held at Cincinnati, Ohio, October 17-21, 1927. The Ohio Society of Sanitarians and the Ohio Health Commissioners will hold their annual meetings in conjunction with the association meeting.

Each of the nine sections of the association—laboratory, health officers, vital statistics, public health engineering, industrial hygiene, food and drugs, child hygiene, public health education, and public health nursing—will hold individual section meetings. In some instances two or more sections will combine for joint meetings. The topic for discussion at the forum session is, "Has prohibition promoted the public health?" C.-E. A. Winslow, Dr. P. H., Yale University, presiding. One session will be given to the discussion of mental hygiene from the standpoint of the home, the school, and the industrial field. An analysis will be made, by a special committee, of the health programs in operation in normal schools and colleges, and will be supplemented by constructive suggestions.

The program for the health officers' section is especially strong this year. This section has tentatively planned five sessions, with a possible sixth session. Three of these sessions will be joint meetings with the public health nursing section, public health education section, and food and drugs section.

The laboratory section is planning four sessions, one of them a joint session with the food and drugs section.

The vital statistics section is planning to devote its first session to a consideration of the reports of various committees; the second session will be devoted to a discussion of the situation in nonregistration States; and the third session is to be devoted to miscellaneous vital statistics papers.

The public health engineering and industrial hygiene sections are arranging for three sessions each.

The food and drugs section has submitted a program for five sessions, two of which are to be joint sessions, as noted above.

The program for the child hygiene section is unique in its development. In each of its three sessions one subject will be presented by a speaker who is making an exhaustive study of the subject assigned to him. The discussion in each session will dwell on this subject.

The public health education and public health nursing sections are planning one session each in addition to the joint sessions in which they will participate.

Five of the sections are planning luncheon and dinner meetings and there will be a special luncheon conference on venereal disease control.

Six special sessions have been planned for this year on the following topics: Prohibition, health program institutions of higher learning, venereal disease control, mental hygiene, and preventive medicine and epidemiology.

The general sessions will be limited to two this year.

Definite times for the various meetings have not yet been assigned. The schedule, however, has tentatively been arranged as follows:

Monday, October 17

Morning—Registration and certain related meetings.
Afternoon—2-4.30—Scientific sessions.
Evening—Opening general session.

Tuesday, October 18

Morning—9.30-12.30—Scientific sessions.
1-3.00—Luncheons and demonstrations.
Afternoon—3-5.30—Scientific sessions.
Evening—Dinner of Ohio Society of Sanitarians.

Wednesday, October 19

Morning—9.30-12.30—Scientific sessions.
1.30-3—Luncheons and demonstrations.
Afternoon—3-5.30—Scientific sessions.
Evening—Second general session.

Thursday, October 20

Morning—9.30–12.30—Scientific sessions.
1–3—Luncheons and demonstrations.
Afternoon—3–5.30—Scientific sessions.
Evening—Entertainment provided by local committee.

Friday, October 21

Morning—9.30–12.30—Scientific sessions.
1.30—Luncheons and committee meetings.

Railroads will grant the usual reduced rates to members and fellows of the association going to Cincinnati for the meeting. Application for reduced fare certificates and for information should be made to Homer N. Calver, executive secretary, American Public Health Association, 370 Seventh Avenue, New York City.

PUBLIC HEALTH SERVICE PUBLICATIONS

A List of Publications Issued During the Period April, 1926–June, 1927

Below is printed a list of publications of the United States Public Health Service issued during the period April, 1926–June, 1927.

The most important articles that appear each week in the Public Health Reports are reprinted in pamphlet form, making possible a wider and more economical distribution of articles that are of especial value and interest to public health workers and the general public.

All of the publications listed below, except those marked with an asterisk (*), are available for free distribution and, as long as the supply lasts, may be obtained by addressing the Surgeon General, United States Public Health Service, Washington, D. C. Those publications marked with an asterisk are not available for free distribution, but may be purchased from the SUPERINTENDENT OF DOCUMENTS, Government Printing Office, Washington, D. C., *at the prices noted*. (No remittances should be sent to the Public Health Service.)

Reprints from the Public Health Reports

1070. Community responsibility of hospitals. By E. H. Lewinski-Corwin. April 2, 1926. 8 pages.
1071. The public health nurse. By J. G. Townsend. April 9, 1926. 12 pages.
1072. Public Health Service publications. A list of publications issued during the period November, 1925–March, 1926. April 9, 1926. 4 pages.
1073. The relative incidence of typhoid fever in cities, towns, and country districts of a southern State. By Chas. N. Leach, and Kenneth F. Maxcy. April 16, 1926. 6 pages.
1074. Whole-time county health officers, 1926. April 16, 1926. 5 pages.
1075. Some publications suitable for general distribution. April 16, 1926. 12 pages.

1076. A comparison of full-time and part-time county health units in Kansas. By Earle G. Brown. April 23, 1926. 4 pages.
1077. The influence of vitamin deficiencies on susceptibility to certain poisons. By Maurice I. Smith, W. T. McClosky, and E. G. Hendrick. April 23, 1926. 14 pages.
1078. The intensive treatment for hay fever. By William Scheppegrell. April 30, 1926. 4 pages.
1079. Extent of rural health service in the United States 1922–1926. By L. L. Lumsden. May 7, 1926. 12 pages.
1080. The leprosy problem in the United States. By O. E. Denney. May 14, 1926. 8 pages.
1081. Endemic goiter and intelligence. By Robert Olesen and Mabel R. Fernald. May 21, 1926. 16 pages.
1082. Notes on the influence of temperature and humidity on oviposition and early life of Anopheles. By Bruce Mayne. May 21, 1926. 5 pages.
1083. A note on an experimental pellagralike condition in the Albino rat. By Joseph Goldberger and R. D. Lillie. May 28, 1926. 5 pages.
1084. A distinctive test for cysteine. By M. X. Sullivan. May 28, 1926. 28 pages.
1085. Studies on the etiology of epidemic encephalitis. I. The streptococcus. By Alice C. Evans and Walter Freeman. June 4, 1926. 21 pages
1086. Results of Dick tests made on different groups. By R. E. Dyer, W. P. Caton, and B. T. Sockrider June 11, 1926. 8 pages.
1087. Clinical observations on endemic typhus (Brill's disease) in southern United States. By Kenneth F. Maxcy. June 18, 1926. 8 pages.
1088. Destroying engorged Anopheles as a malaria-control measure. By J. A. Le Prince. June 18, 1926 6 pages.
1089. Agglutination, cross agglutination, and agglutinin absorption in tularaemia. By Edward Francis and Alice C. Evans. June 25, 1926. 23 pages.
1090. Six additional cases of laboratory infection of tularaemia in man. By R. R. Parker and R. R. Spencer. July 2, 1926. 14 pages.
1091. A case of tularaemia in a laboratory worker. By Louis V. Dieter. July 2, 1926 4 pages.
1092. Hereditary transmission of tularaemia infection by the wood tick, *Dermacentor andersoni* Stiles. By R. R. Parker and R. R. Spencer. July 9, 1926. 5 pages.
1093. The susceptibility of the coyote (*Canis lestes*) to tularaemia. By R. R. Parker and Edward Francis. July 9, 1926. 4 pages.
1094. The so-called action of acid sodium phosphate in delaying the onset of fatigue. By Frederick B. Flinn. July 16, 1926. 14 pages.
1095. A state-wide smallpox survey in Tennessee. By W. J. Breeding and E. A. Lane. July 23, 1926. 5 pages.
1096. Benzol poisoning as an industrial hazard. Review of studies conducted in cooperation with the subcommittee on benzol of the committee on industrial poisoning of the National Safety Council. By Leonard Greenburg. July 2, 9, 23, 1926. 63 pages.
1097. Report of the Committee on Uniform Standard Milk Ordinance. Conference of State and Territorial Health Officers, 1926. July 30, 1926. 10 pages.
1098. A national program for the unification of milk control. By Leslie C. Frank. July 30, 1926. 34 pages.
1099. United States Public Health Service standard milk ordinance, modified as adopted by the Conference of State and Territorial Health Officers at Washington, D. C., May, 1926. July 30, 1926. 13 pages.

1100. Food poisoning from a streptococcus in cheese. By B. A. Linden, W. R. Turner, and Charles Thom. August 6, 1926. 6 pages.

1101. Report of a survey to determine the malaria prevalence in the Okefenokee Swamp. By Bruce Mayne. August 6, 1926. 8 pages.

1102. Incidence of endemic thyroid enlargement in Connecticut. By Robert Olesen and Neil E. Taylor. August 13, 1926. 13 pages.

1103. City health officers, 1926. Directory of those in cities of 10,000 or more population. August 13, 1926. 12 pages.

1104. The influenza epidemic of 1926. A preliminary note on certain epidemiological indications. August 20, 1926. 16 pages.

1105. Rocky Mountain spotted fever. Certain characteristics of blood virus. By R. R. Spencer and R. R. Parker. August 27, 1926. 6 pages.

1106. State and insular health authorities, 1926. Directory with data as to appropriations and publications. August 27, 1926. 22 pages.

1107. Biological products. Establishments licensed for the propagation and sale of viruses, serums, toxins, and analogous products. September 3, 1926. 5 pages.

1108. Endemic goiter and physical development. I. Cincinnati school children. By Robert Olesen and Neil E. Taylor. September 3, 1926. 16 pages.

1109. The radioactivity of natural waters. By W. D. Collins. September 10, 1926. 4 pages.

1110. The physiological effects of currents of very high frequency (135,000,000 to 8,300,000 cycles per second). By J. W. Schereschewsky. September 10, 1926. 24 pages.

1111. The notifiable diseases. Prevalence during 1925 in cities of over 100,000. September 17, 1926. 33 pages.

1112. Public health in State constitutions. By James A. Tobey. September 24, 1926. 4 pages.

1113. A study of illness in a general population group. Hagerstown morbidity studies No. I: The method of study and general results. By Edgar Sydenstricker. September 24, 1926. 20 pages.

1114. Experimental studies of water purification. I. Description of experimental water-purification plant. By Frederic J. Moss. II. Preliminary review of results of primary experiments. By H. W. Streeter. October 1, 1926. 26 pages.

1115. Report of an epidemic of glandular fever (infectious mononucleosis). By R. R. Spencer. October 8, 1926. 6 pages.

1116. The reporting of notifiable diseases in a typical small city. Hagerstown morbidity studies No. II. By Edgar Sydenstricker. October 8, 1926. 6 pages.

1117. The notifiable diseases. Prevalence during 1925 in cities of 10,000 to 100,000 population. October 15, 1926. 108 pages.

1118. Cooperative rural health work of the Public Health Service in the fiscal year 1926. By L. L. Lumsden. October 22, 1926. 40 pages.

1119. Endemic goiter and school absenteeism. By Robert Olesen and Neil E. Taylor. October 29, 1926. 10 pages.

1120. What the Government is doing for tuberculous persons. By Lucy Minnigerode. October 29, 1926. 8 pages.

1121. Malaria in the prairie-rice regions of Louisiana and Arkansas. By M. A. Barber, W. H. W. Komp, and T. B. Hayne. November 5, 1926. 22 pages.

1122. Pan American Conference of Directors of Health. November 12, 1926. 8 pages.

1123. National Leper Home (Marine Hospital No. 66). Review of the more important activities during the fiscal year ended June 30, 1926. By O. E. Denney. November 12, 1926. 5 pages.
1124. Organization of the health program of a university. By D. F. Smiley. November 19, 1926. 19 pages.
1125. Distribution of endemic goiter in the United States as shown by thyroid surveys. By Robert Olesen. November 26, 1926. 13 pages.
1126. Report of the committee on sanitary control in the development of ground-water supplies. November 26, 1926. 13 pages.
1127. Health studies of negro children. I. Intelligence studies of negro children in Atlanta, Ga. By Virginia Taylor Graham. December 3, 1926. 25 pages.
1128. The work of the United States Public Health Service. December 10, 1926. 28 pages.
1129. The control of communicable diseases. Report of the American Public Health Association committee on standard regulations appointed in October, 1916, revised by the committee in October, 1926. December 17, 1926. 35 pages.
1130. An epidemiological study of endemic typhus (Brill's disease) in the south-eastern United States. With special reference to its mode of transmission. By Kenneth F. Maxcy. December 24, 1926 29 pages.
1131. Synthesis and indicator properties of some new sulfonphthaleins. By Barnett Cohen. December 31, 1926. 28 pages.
1132. The notifiable diseases. Prevalence in States, 1925. January 7, 1927. 60 pages.
1133. Epidemiological study of minor respiratory diseases. Progress report II: Based on records for families of medical officers of the Army, Navy, and Public Health Service and of members of several university faculties. By J. G. Townsend and Edgar Sydenstricker. January 14, 1927. 22 pages.
1134. The extent of medical and hospital service in a typical small city. By Edgar Sydenstricker. January 14, 1927. 11 pages
1135. Studies on the etiology of epidemic encephalitis. II. Virulent bacteria cultivated from so-called herpetic and encephalitic viruses. By Alice C. Evans. January 21, 1927. 6 pages.
1136. Sterilizing efficiency of arsphenamine, neoarsphenamine, and sulpharsphenamine in experimental syphilis. By Carl Voegtlin and H. A. Dyer. January 21, 1927. 11 pages.
1137. Questions and answers on smallpox and vaccination. By J. P. Leake. January 28, 1927. 19 pages.
1138. Some special features of the work of the Public Health Service. February 4 and February 11, 1927. 77 pages.
1139. Toxic effects of ethylene dibromide. By B. G. H. Thomas and W. P. Yant. February 11, 1927. 5 pages.
1140. Paris green applied by airplane in the control of Anopheles production. By L. L. Williams, jr., and S. S. Cook. February 18, 1927. 5 pages.
1141. Preparation and use of investigation forms. By V. L. Ellicott and Ellen Murphy Englert. February 18, 1927. 5 pages.
1142. A 10-year record of absences from work on account of sickness and accidents. Experience of employees of the Edison Electric Illuminating Co. of Boston, 1915 to 1924, inclusive. By Dean K. Brundage. February 25, 1927. 22 pages.

1143. Further studies on the relationship of endemic goiter to certain potential foci of infection. II. In Connecticut. By Robert Olesen and Neil E. Taylor. March 4, 1927. 15 pages.
1144. Standard milk ordinance results in 14 Alabama towns. By Leslie C. Frank, S. W. Welch, and C. A. Abele. March 11, 1927. 11 pages.
1145. The orthotolidine reagent for free chlorine in water. By Emery J. Theriault. March 11, 1927. 5 pages.
1146. The problem of fetal and neonatal death. By Blanche Sterling. March 18, 1927. 35 pages.
1147. Examination of food handlers. By M. James Fine. March 25, 1927. 5 pages.
1148. Endemic thyroid enlargement in Massachusetts. By Robert Olesen and Neil E. Taylor. March 25, 1927. 14 pages.
1149. Ship fumigation determined by observed rodent infestation. By C. V. Akin and G. C. Sherrard. April 1, 1927. 8 pages.
1150. Review of literature on the physiological effects of abnormal temperatures and humidities. By R. R. Sayers and Sara J. Davenport. April 8, 1927. 63 pages.
1151. Intradermal smallpox vaccination. A method for increasing the administrative value of the immediate reaction of immunity. By John N. Force. April 15, 1927. 14 pages.
1152. Arsphenamine-sodium thiosulphate treatment of experimental syphilis. By Carl Voegtlin and Helen A. Dyer. April 15, 1927. 8 pages.
1153. Preliminary report of screening studies in Leflore County, Miss. By C. P. Coogle. April 22, 1927. 12 pages.
1154. Definitions of Pasteurization and their enforcement. By Leslie C. Frank, Frederic J. Moss, and Peter E. LeFevre. April 29, 1927. 11 pages.
1155. Extent of rural health service in the United States 1923-1927. By L. L. Lumsden. April 29, 1927. 12 pages.
1156. A résumé, with comments, of the available literature relating to posture. By Louis Schwartz. May 6, 1927. 30 pages.
1157. A study of the pellagra-preventive action of the tomato, carrot, and rutabaga turnip. By Joseph Goldberger and G. A. Wheeler. May 13, 1927. 8 pages.
1158. Iodization of public water supplies for prevention of endemic goiter. By Robert Olesen. May 20, 1927. 13 pages.
1159. Malaria among Mexican cotton pickers imported into Mississippi. By M. A. Barber and C. P. Coogle. May 20, 1927. 4 pages.
1160. The public health organization of Denmark. By Thomas Parran, Jr. May 27, 1927. 38 pages.
1161. The food of anopheline larvae—Food organisms in pure culture. By M. A. Barber. June 3, 1927. 8 pages.
1162. Drinking water coolers on common carriers. By Arthur P. Miller. June 10, 1927. 8 pages.
1163. The age curve of illness—Hagerstown morbidity studies No. IV. By Edgar Sydenstricker. June 10, 1927. 12 pages.
1164. Whole-time county health officers, 1927. June 10, 1927. 6 pages.
1165. Recent developments in sewage chlorination. By L. H. Enslow. June 17, 1927. 18 pages.
1166. The spleen rate as a measure of malaria prevalence in the United States. By C. P. Coogle. June 24, 1927. 6 pages.
1167. A comparison of the incidence of illness and death—Hagerstown morbidity studies No. V. By Edgar Sydenstricker. June 24, 1927. 13 pages.

Supplements to the Public Health Reports

54. Studies on oxidation reduction. IX. A potentiometric and spectrophotometric study of meriquinones of the p-phenylene diamine and the benzidine series. By W. Mansfield Clark, Barnett Cohen, and H. D. Gibbs. 1926. 61 pages.
55. Studies on oxidation reduction. X. Reduction potentials in cell suspensions. By R. K. Cannan, Barnett Cohen, and W. Mansfield Clark. 1926. 34 pages.
56. Court decisions relating to public health. Digest of decisions abstracted and published currently in Public Health reports during the period 1919–1925. Prepared by William Fowler. 1926. 66 pages.
57. Tuberculin: A report of a conference on its standardization. 1926. 51 pages.
58. Sewage disposal for suburban and country homes. The septic tank and sanitary sewers. 1926. 41 pages.
59. Public health laws and regulations adopted during 1925 Compiled by Jason Waterman and William Fowler. 1927. 513 pages.
60. Smallpox vaccination laws, regulations, and court decisions Prepared by William Fowler. 1927. 74 pages.
61. Studies on oxidation reduction XI. Potentiometric and spectrophotometric studies of Bindschedler's green and toluylene blue. By Max Phillips, W. Mansfield Clark, and Barnett Cohen. 1927. 36 pages.
62. Further studies on the importance of milk and milk products as a factor in the causation of outbreaks of disease in the United States. By Charles Armstrong and Thomas Parran, Jr. 1927. 81 pages
63. The notifiable diseases. Prevalence during 1926 in cities of over 100,000. 1927. 35 pages.
64. The notifiable diseases. Prevalence during 1926 in cities of 10,000 to 100,000 population. 1927. 87 pages.

Public Health Bulletins

157. Health hazards of brass foundries. I. Field investigations of the health hazards of the brass-foundry industry. II. Laboratory studies relating to the pathology of brass foundrymen's ague. By John Arthur Turner and L. R. Thompson. August, 1925. 75 pages.
159. Studies in natural illumination in schoolrooms. A report on the observations of daylight illumination of selected classrooms of different orientation during the period of an entire school year. By Taliaferro Clark and Arthur F. Beal. January, 1926. 57 pages.
160. Transactions of the Sixth Annual Conference of State Sanitary Engineers, held at Louisville, Ky., April 25 and 27, 1925. January, 1926. 142 pages.
162. A health study of ten thousand male industrial workers. Statistical analysis of surveys in ten industries. By Rollo H. Britten and L. R. Thompson. June, 1926. 170 pages.
163. The use of tetraethyl lead gasoline in its relation to public health. Prepared by direction of the Surgeon General. June, 1926. 123 pages.
164. Municipal health department practice for the year 1923. Based upon surveys of the 100 largest cities in the United States. Made by the United States Public Health Service in cooperation with the committee on administrative practice, American Public Health Association. July, 1926. 782 pages.

165. Economic status and health. A review and study of the relevant morbidity and mortality data. By Selwyn D. Collins. September, 1926. 74 pages.
166. Report on municipal sanitary engineering practice in Great Britain. By H. W. Streeter. February, 1927. 56 pages.
167. Transactions of the Twenty-fourth Annual Conference of State and Territorial Health Officers with the United States Public Health Service, held at Washington, D. C., May 24 and 25, 1926. February, 1927. 124 pages.
168. Studies upon leprosy. XLII. The plasma proteins in leprosy. By M. H. Neill and Margaret M. Dewar. XLIV. Observations on the amount of lipase in the blood serum of lepers. By M. H. Neill and Margaret M. Dewar. XLV. The synthesis of iododihydrochaulmoogric acid and its ethyl ester. By Arthur L. Dean, Richard Wrenshall, and G. Fujimoto. XLVI. The preparation of 4-chaulmoogrylaminophenylarsonic acid. By Margaret M. Dewar. XLVII. The preparation of chaulmoogryl alcohol. By Margaret M. Dewar. XLVIII. Radium treatment of the nasal lesions of leprosy. By R. P. Sandidge and M. H. Neill. Appendix: Protocol of lipase tests. April, 1927. 74 pages.
169. Transactions of the Seventh Annual Conference of State Sanitary Engineers, held at Buffalo, N. Y., June 5 and 7, 1926. February, 1927. 93 pages.

Hygienic Laboratory Bulletins

144. Digest of Comments on the Pharmacopœia of the United States of America and on the National Formulary for the calendar year ended December 31, 1922. By A. G. DuMez. April, 1926. 272 pages.
*145. The nomenclature for man, the chimpanzee, the orang-utan, and the Barbary ape. By Ch. Wardell Stiles and Mabelle B. Orleman. March, 1927. 66 pages. 20 cents.
*146. Compendium of the parasites of mosquitoes (*Culicidæ*). By Alma Jane Speer. March, 1927. 36 pages. 10 cents.
147. Experimental bacterial and chemical pollution of wells via ground water, and the factors involved. By C. W. Stiles, H. R. Crohurst, and Gordon E. Thomson. Report on the geology and ground water hydrology of the experimental area of the United States Public Health Service at Fort Caswell, N. C. By Norah Dowell Stearns. June, 1927. 168 pages.
148. Key catalogue of the crustacea and arachnoids of importance in public health. By C. W. Stiles and Albert Hassall. April, 1927. 289 pages.

Annual Report

Annual report of the Surgeon General of the United States Public Health Service for the fiscal year 1926. 330 pages. Cloth.

Miscellaneous Publications

11. Official list of commissioned and other officers of the United States Public Health Service; also list of United States marine hospitals, quarantine, immigration, and relief stations and quarantine vessels. July 1, 1926. 71 pages. Paper.

Unnumbered Publications

Report of the committee on cross connections. Conference of State sanitary engineers. Excerpt from Public Health Bulletin No. 169—Transactions of the Seventh Annual Conference of State Sanitary Engineers, 1926. 8 pages.

Report of the joint committee on swimming pools and bathing places. Conference of State sanitary engineers. Excerpt from Public Health Bulletin No. 169—Transactions of the Seventh Annual Conference of State Sanitary Engineers, 1926. 20 pages.

The United States Public Health Service. What does it do for me? Issued for distribution at the National Sesquicentennial Exposition, Philadelphia, 1926. 8 pages.

*National negro health week program. This pamphlet is published annually, usually about the middle of March, for community leaders in an effort to suggest ways and means by which interested individuals and organizations may be organized for a concerted and effective attack upon the community's disease problems. 1927. 16 pages. (Out of print.)

*National negro health week poster. 1927. In colors. (Out of print.)

Venereal Disease Publications

BULLETINS

Venereal Disease Bulletin No. 83. Pamphlet. You and your boy. 4 pages.

Venereal Disease Bulletin No. 84. Catalogue of educational material. 20 pages.

Venereal Disease Bulletin No. 85. Pamphlet. Where away? 16 pages.

Venereal Disease Bulletin No. 86. Sex education—A symposium for educators. 58 pages.

REPRINTS FROM PUBLIC HEALTH REPORTS RELATING TO VENEREAL DISEASE

857. The curative action of sulpharsphenamine in experimental syphilis. By Carl Voegtlin, C. Armstrong, and Helen Dyer. August 10, 1923. 4 pages.

1051. Reinoculation as a criterion of cure of experimental syphilis, with reference to arsphenamine, neoarsphenamine, and sulpharsphenamine. By Carl Voegtlin and Helen A. Dyer. November 13, 1925. 9 pages.

1136. Sterilizing efficiency of arsphenamine, neoarsphenamine, and sulpharsphenamine in experimental syphilis. By Carl Voegtlin and Helen A. Dyer. January 21, 1927. 11 pages.

1152. Arsphenamine-sodium thiosulphate treatment of experimental syphilis. By Carl Voegtlin and Helen A. Dyer. April 15, 1927. 8 pages.

DEATHS DURING WEEK ENDED AUGUST 13, 1927

Summary of information received by telegraph from industrial insurance companies for week ended August 13, 1927, and corresponding week of 1926. (From the Weekly Health Index, August 17, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Aug. 13, 1927	Corresponding week 1926
Policies in force	68, 176, 376	65, 073, 227
Number of death claims	10, 588	10, 561
Death claims per 1,000 policies in force, annual rate	8. 1	8. 5

Deaths from all causes in certain large cities of the United States during the week ended August 13, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, August 17, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Aug. 13, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Aug. 13, 1927 [2]
	Total deaths	Death rate [1]		Week ended Aug. 13, 1927	Corresponding week 1926	
Total (67 cities)	5,933	10.5	[4] 10.6	662	[4] 782	[4] 54
Akron	30			3	3	32
Albany [5]	26	11.3	7.9	4	4	83
Atlanta	42			6	10	
White	23			2	4	
Colored	19	([6])		4	6	
Baltimore [5]	172	11.0	12.0	29	41	90
White	119		11.0	20	26	77
Colored	53	([6])	18.0	9	15	140
Birmingham	58	14.1	18.5	8	10	
White	23		13.9	2	6	
Colored	35	([6])	25.8	6	4	
Boston	171	11.2	12.0	21	36	59
Bridgeport	25			2	7	37
Buffalo	120	11.4	10.7	7	13	29
Cambridge	23	9.7	9.0	2	3	36
Camden	22	8.6	13.1	2	7	34
Canton	17	7.8	9.0	0	5	0
Chicago [5]	628	10.6	8.5	70	61	61
Cincinnati	124	15.7	17.4	14	19	87
Cleveland	155	8.2	9.4	17	25	45
Columbus	68	12.2	12.4	4	4	37
Dallas	46	11.5	14.1	8	11	
White	39		11.0	7	8	
Colored	7	([6])	34.8	1	3	
Dayton	30	8.7	9.7	5	0	82
Denver	73	13.1	12.8	12	6	
Des Moines	22	7.7	6.8	1	2	17
Detroit	232	9.1	10.5	45	38	71
Duluth	21	9.5	9.7	6	0	129
El Paso	28	12.8	11.0	5	6	
Erie	18			4	4	78
Fall River [5]	18	7.1	8.4	3	6	53
Flint	20	7.3	6.1	6	3	98
Fort Worth	35	11.1	7.9	6	2	
White	30		6.7	5	2	
Colored	5	([6])	16.5	1	0	
Grand Rapids	21	6.9	10.7	3	3	44
Houston	80			8	5	
White	57			7	3	
Colored	23	([6])		1	2	
Indianapolis	86	12.0	13.2	7	19	55
White	73		12.6	5	17	45
Colored	13	([6])	17.8	2	2	122
Jersey City	64	10.4	8.5	6	8	45
Kansas City, Kans	25	11.1	12.5	5	4	97
White	19		11.3	4	3	89
Colored	6	([6])	17.8	1	1	152
Kansas City, Mo	83	11.3	13.8	7	12	
Knoxville	30	15.3		3		
White	24			3		
Colored	6	([6])		0		
Los Angeles	222			23	17	66
Louisville	77	12.5	10.6	6	13	51
White	62		9.9	6	10	58
Colored	15	([6])	14.4	0	3	0
Lowell	25	11.8	9.5	8	4	154
Lynn	12	6.0	4.0	2	0	53
Memphis	50	14.6	23.0	2	10	
White	23		18.8	2	6	
Colored	27	([6])	30.6	0	4	
Milwaukee	99	9.7	8.1	12	10	56
Minneapolis	86	10.1	9.0	9	8	51
Nashville [5]	31	11.7	18.6	1	13	
White	17		14.9	1	11	
Colored	14	([6])	28.1	0	2	
New Bedford	32	14.0	10.5	5	2	87
New Haven	13	3.7	8.9	1	1	14

See footnotes at bottom of table.

Deaths from all causes in certain large cities of the United States during the week ended August 13, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926—Continued

City	Week ended Aug. 13, 1927: Total deaths	Week ended Aug. 13, 1927: Death rate [1]	Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year: Week ended Aug 13, 1927	Deaths under 1 year: Corresponding week 1926	Infant mortality rate, week ended Aug. 13, 1927 [2]
New Orleans	145	17.8	17.8	20	19	
White	90		14.1	13	9	
Colored	55	(6)	28.2	7	10	
New York	1,126	9.8	9.7	104	138	43
Bronx Borough	118	6.6	8.1	7	9	22
Brooklyn Borough	414	9.5	8.5	52	57	54
Manhattan Borough	453	13.0	12.8	37	52	43
Queens Borough	105	6.8	7.6	7	19	30
Richmond Borough	36	12.8	10.6	1	1	19
Newark, N. J.	111	12.4	9.3	13	9	64
Oakland	38	7.4	11.0	7	3	82
Oklahoma City	35			8	2	
Omaha	57	13.6	9.7	7	3	78
Paterson	37	13.4	10.9	2	4	35
Philadelphia	350	9.0	9.9	39	53	52
Pittsburgh	128	10.4	10.6	27	16	94
Portland, Oreg.	51			4	2	42
Providence	46	8.5	9.5	2	9	17
Richmond	50	13.6	15.2	9	10	119
White	31		12.5	6	8	121
Colored	19	(6)	21.8	3	2	114
Rochester	57	9.2	10.2	7	9	59
St. Louis	198	12.3	13.7	19	22	
St. Paul	40	8.3	9.3	2	0	18
Salt Lake City [5]	18	6.9	9.8	3	6	46
San Antonio	57	14.1	10.2	11	8	
San Diego	35	15.9	18.0	1	4	21
San Francisco	134	12.1	9.9	5	6	31
Schenectady	11	6.2	5.0	0	1	0
Seattle	63			1	3	10
Somerville	11	5.6	11.5	0	3	0
Spokane	20	9.6	12.4	1	1	25
Springfield, Mass.	30	10.6	6.8	4	2	62
Syracuse	41	10.9	12.1	6	5	77
Tacoma	10	4.9	11.8	0	3	0
Toledo	58	9.9	10.4	2	4	19
Trenton	27	10.3	12.1	1	0	17
Washington, D. C.	124	12.0	13.7	10	13	58
White	66		10.2	7	7	59
Colored	58	(6)	24.2	3	6	55
Waterbury	13			1	2	24
Wilmington, Del.	29	12.0	10.1	3	3	74
Worcester	46	12.3	13.2	1	5	12
Yonkers	21	9.2	7.2	1	4	23
Youngstown	35	10.3	12.0	3	10	42

1 Annual rate per 1,000 population.
2 Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
3 Data for 66 cities.
4 Data for 62 cities.
5 Deaths for week ended Friday, Aug. 12, 1927.
6 In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15, Fort Worth, 14; Houston, 25, Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended August 20, 1927

DIPHTHERIA	Cases
Alabama	32
Arizona	1
Arkansas	2
California	55
Colorado	12
Connecticut	15
Florida	9
Georgia	23
Idaho	3
Illinois	74
Indiana	13
Iowa [1]	10
Kansas	9
Louisiana	20
Maine	5
Maryland [1]	23
Massachusetts	61
Michigan	40
Minnesota	20
Mississippi	16
Missouri	21
Montana	5
Nebraska	5
New Jersey	53
New Mexico	2
New York [2]	41
North Carolina	59
Oklahoma [3]	7
Oregon	7
Pennsylvania	75
Rhode Island	8
South Carolina	25
South Dakota	2
Tennessee	12
Texas	24
Utah [1]	3
Washington	20
West Virginia	14
Wisconsin	16

[1] Week ended Friday.
[2] Exclusive of New York City
[3] Exclusive of Oklahoma City and Tulsa.

INFLUENZA	Cases
Alabama	17
Arkansas	8
California	3
Connecticut	1
Florida	1
Georgia	21
Illinois	5
Indiana	6
Kansas	1
Louisiana	13
Maryland [1]	5
Massachusetts	1
Michigan	1
Minnesota	2
Missouri	1
Oklahoma [3]	6
Oregon	6
South Carolina	100
Tennessee	4
Texas	6
West Virginia	2
Wisconsin	10

MEASLES	Cases
Alabama	16
Arizona	2
California	43
Colorado	1
Connecticut	6
Delaware	1
Florida	2
Georgia	13
Illinois	23
Indiana	5
Iowa [1]	6
Kansas	18
Louisiana	1
Maine	8
Maryland [1]	15

[1] Week ended Friday.
[3] Exclusive of Oklahoma City and Tulsa.

MEASLES—continued	Cases
Massachusetts	46
Michigan	23
Minnesota	5
Missouri	6
Nebraska	1
New Jersey	4
New Mexico	26
New York [2]	55
North Carolina	183
Oklahoma [3]	34
Oregon	7
Pennsylvania	37
Rhode Island	1
South Carolina	40
South Dakota	2
Tennessee	13
Texas	13
Utah [1]	1
Vermont	9
Washington	20
West Virginia	12
Wisconsin	88
Wyoming	3

MENINGOCOCCUS MENINGITIS	
Alabama	1
California	4
Colorado	1
Illinois	9
Iowa [1]	1
Kansas	1
Maryland [1]	1
Massachusetts	2
Michigan	1
Minnesota	3
Missouri	2
Montana	1
New York [2]	2
Oklahoma [3]	1
Oregon	5
Utah [1]	1
Washington	1
West Virginia	1
Wisconsin	4

POLIOMYELITIS	
Alabama	2
Arizona	4
Arkansas	1
California	44
Colorado	1
Connecticut	17
Georgia	1
Illinois	16
Indiana	2
Iowa [1]	3
Kansas	10
Louisiana	2
Maine	1
Maryland [1]	1
Massachusetts	38
Michigan	9

[1] Week ended Friday.
[2] Exclusive of New York City.
[3] Exclusive of Oklahoma City and Tulsa.

POLIOMYELITIS—continued	Cases
Minnesota	1
Mississippi	1
Missouri	2
Nebraska	1
New Jersey	22
New Mexico	8
New York [2]	20
Ohio [4]	65
Oklahoma [3]	7
Oregon	12
Pennsylvania	7
Rhode Island	1
South Carolina	1
South Dakota	1
Tennessee	1
Texas	15
Utah [1]	1
Washington	1
West Virginia	8
Wisconsin	7

SCARLET FEVER	
Alabama	22
Arizona	4
Arkansas	4
California	48
Colorado	8
Connecticut	13
Florida	1
Georgia	8
Idaho	3
Illinois	75
Indiana	26
Iowa [1]	7
Kansas	12
Louisiana	8
Maine	19
Maryland [1]	11
Massachusetts	88
Michigan	51
Minnesota	40
Mississippi	9
Missouri	19
Montana	103
Nebraska	1
New Jersey	34
New Mexico	7
New York [2]	43
North Carolina	25
Oklahoma [3]	3
Oregon	3
Pennsylvania	70
Rhode Island	1
South Carolina	11
South Dakota	3
Tennessee	9
Texas	13
Utah [1]	6
Vermont	2
Washington	10
West Virginia	26
Wisconsin	45

[1] Week ended Friday.
[2] Exclusive of New York City.
[3] Exclusive of Oklahoma City and Tulsa.
[4] Week ended Aug. 23.

SMALLPOX	Cases
Alabama	3
Arkansas	6
California	5
Florida	2
Idaho	1
Illinois	12
Indiana	23
Iowa [1]	14
Kansas	3
Louisiana	2
Michigan	11
Mississippi	1
Missouri	5
New York [2]	8
North Carolina	10
Oklahoma [3]	5
Oregon	6
South Carolina	21
South Dakota	7
Tennessee	5
Texas	1
Utah [1]	2
Washington	13
West Virginia	4
Wisconsin	5
TYPHOID FEVER	
Alabama	88
Arizona	8
California	16
Colorado	8
Connecticut	5
Delaware	6

[1] Week ended Friday.
[2] Exclusive of New York City.
[3] Exclusive of Oklahoma City and Tulsa.

TYPHOID FEVER—continued	Cases
Florida	13
Georgia	83
Illinois	49
Indiana	16
Iowa [1]	5
Kansas	27
Louisiana	37
Maine	5
Maryland [1]	56
Massachusetts	13
Michigan	19
Minnesota	3
Mississippi	28
Missouri	32
Montana	2
Nebraska	4
New Jersey	15
New Mexico	12
New York [2]	11
North Carolina	55
Oklahoma [3]	97
Oregon	4
Pennsylvania	40
Rhode Island	2
South Carolina	77
South Dakota	2
Tennessee	92
Texas	24
Utah [1]	1
Vermont	1
Washington	9
West Virginia	42
Wisconsin	13

[1] Week ended Friday.
[2] Exclusive of New York City.
[3] Exclusive of Oklahoma City and Tulsa.

Reports for Week Ended August 13, 1927

DIPHTHERIA	Cases
District of Columbia	13
MEASLES	
North Dakota	2
POLIOMYELITIS	
District of Columbia	2
SCARLET FEVER	
District of Columbia	3
North Dakota	20

SMALLPOX	Cases
District of Columbia	1
North Dakota	3
TYPHOID FEVER	
District of Columbia	2
North Dakota	1

POLIOMYELITIS IN OHIO

The State Department of Public Health of Ohio reports cases of poliomyelitis in the State from July 10 to August 16, 1927, inclusive, as follows:

Cincinnati and vicinity	16
Cleveland Heights	3
Coshocton	1
Dayton	1
Dennison	3
East Cleveland	1
Marion	1
Martins Ferry and vicinity	31
Struthers	2
Uhrichsville	5
Brown County	3
Coshocton County	1
Drake County	1
Hamilton County	1
Jefferson County	2
Lucas County	1
Marion County	1
Monroe County	2
Portage County	1
Richland County	1
Scioto County	2
Trumbull County	1
Tuscarawas County	4
Wayne County	1

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
May, 1927										
Arkansas	0	11	189	223	308	94	1	21	7	74
June, 1927										
Arkansas	1	17	62	587	264	187	9	15	23	131
Pennsylvania	7	645			1,865	2	2	1,276	2	78
July, 1927										
Arkansas	0	8	30	620	124	355	5	9	11	111
Iowa	2	62			74		1	73	87	14
Massachusetts	4	264	11	1	1,023	2	23	643	0	34
Michigan		251	5		398		7	435	91	50
New Jersey	3	304	4	1	82		12	268	0	45
Tennessee	2	54	57	465	85	241	7	77	55	950

May, 1927

	Cases
Arkansas	
Chicken pox	66
Hookworm disease	3
Mumps	118
Ophthalmia neonatorum	7
Trachoma	4
Whooping cough	222

June, 1927

	Cases
Chicken pox:	
Arkansas	132
Pennsylvania	1,306
German measles:	
Pennsylvania	273
Hookworm disease:	
Arkansas	3
Impetigo contagiosa:	
Pennsylvania	18
Leprosy:	
Pennsylvania	1
Lethargic encephalitis:	
Pennsylvania	5
Mumps:	
Arkansas	112
Pennsylvania	1,321
Ophthalmia neonatorum:	
Arkansas	7
Pennsylvania	13
Paratyphoid fever:	
Arkansas	3
Puerperal fever:	
Pennsylvania	9
Rabies in man:	
Pennsylvania	1
Scabies:	
Pennsylvania	18
Tetanus:	
Pennsylvania	9
Trachoma:	
Arkansas	1
Pennsylvania	1
Whooping cough:	
Arkansas	222
Pennsylvania	652

July, 1927

	Cases
Anthrax:	
Massachusetts	1
Chicken pox:	
Arkansas	52
Iowa	39
Massachusetts	423
Michigan	380
New Jersey	104
Tennessee	28
Dysentery:	
Massachusetts	1
New Jersey	2
Tennessee	149
German measles:	
Massachusetts	50
New Jersey	20
Hookworm disease:	
Arkansas	2
Impetigo contagiosa:	
Iowa	1
Lead poisoning:	
Massachusetts	5
New Jersey	6
Lethargic encephalitis:	
Massachusetts	6
Michigan	4
Mumps:	
Arkansas	74
Iowa	19
Massachusetts	338
Michigan	187
Tennessee	22
Ophthalmia neonatorum:	
Arkansas	2
Massachusetts	110
New Jersey	3
Paratyphoid fever:	
Arkansas	1
New Jersey	4
Tennessee	14
Rabies in man:	
Tennessee	6

July, 1927—Continued

Septic sore throat:	Cases
Massachusetts	9
Michigan	3
Tennessee	3
Tetanus:	
Iowa	2
Massachusetts	3
Trachoma:	
Arkansas	5
New Jersey	1

July, 1927—Continued

Whooping cough:	Cases
Arkansas	137
Iowa	96
Massachusetts	360
Michigan	675
New Jersey	593
Tennessee	246

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 93 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,550,000. The estimated population of the 87 cities reporting deaths is more than 29,850,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended August 6, 1927, and August 7, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
43 States	934	846	
93 cities	463	455	507
Measles:			
42 States	1,319	1,971	
93 cities	275	399	
Poliomyelitis:			
44 States	190	69	
Scarlet fever:			
43 States	1,008	921	
93 cities	303	355	261
Smallpox:			
43 States	203	291	
93 cities	34	44	41
Typhoid fever:			
43 States	1,043	1,247	
93 cities	145	158	186
Deaths reported			
Influenza and pneumonia:			
87 cities	282	324	

City reports for week ended August 6, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during non-epidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	0	1	0	0	0	0	0	0
New Hampshire.									
Concord	22,546	0	1	0	0	0	0	0	0
Manchester	83,097	0	0	0	0	0	0	0	0
Nashua	29,723	0	0	0	0	0	1	0	0
Vermont:									
Barre	10,008	0	0	0	0	0	0	0	0
Massachusetts.									
Boston	779,620	12	31	13	0	0	33	11	9
Fall River	128,993	0	2	2	1	0	1	0	0
Springfield	142,065	0	1	4	0	0	2	2	2
Worcester	190,757	2	3	1	0	0	0	1	1
Rhode Island.									
Pawtucket	69,760	0	1	1	0	0	0	0	0
Providence	267,918	0	3	3	0	0	0	0	1
Connecticut.									
Bridgeport	(1)	0	4	3	0	0	0	0	0
Hartford	160,197	0	3	0	0	0	0	2	1
New Haven	178,927	2	1	0	0	0	2	0	0
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	7	11	7		0	9	9	5
New York	5,873,356	23	112	110	2	1	17	26	57
Rochester	316,786	2	4	1		0	1	3	2
Syracuse	182,003	7	3	0		0	21	0	3
New Jersey									
Camden	128,642	0	2	4	0	0	0	0	0
Newark	452,513	8	6	10	1	0	2	15	6
Trenton	132,020	0	1	1	0	0	1	0	1
Pennsylvania:									
Philadelphia	1,979,364	12	35	38		1	13	24	14
Pittsburgh	631,563	3	12	13	0	0	20	6	5
Reading	112,707	0	2	3	0	0	4	0	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	2	4	3	0	0	1	2	3
Cleveland	936,485	12	17	20	0	0	3	17	4
Columbus	279,836	0	2	2	0	0	0	3	3
Toledo	287,380	0	4	1	0	1	4	1	2
Indiana:									
Fort Wayne	97,846	0	1	3	0	0	0	0	0
Indianapolis	358,819	1	3	3	0	0	0	2	4
South Bend	80,091	0	0	2	0	0	0	0	0
Terre Haute	71,071	0	0	1	0	0	1	0	0
Illinois:									
Chicago	2,995,239	19	49	58	3	0	9	21	31
Springfield	63,923	8	1	0	0	0	1	0	0
Michigan:									
Detroit	1,245,824	13	30	15	1	0	4	11	15
Flint	130,316	1	3	1	0	0	1	3	2
Grand Rapids	153,698	1	2	0	0	0	3	1	0

[1] No estimate made.

City reports for week ended August 6, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria: Cases, estimated expectancy	Diphtheria: Cases reported	Influenza: Cases reported	Influenza: Deaths reported	Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
EAST NORTH CENTRAL—continued									
Wisconsin:									
Kenosha	50,891	0	0	2	0	0	0	0	0
Madison	46,385	0	0	0	0	0	0	0	1
Milwaukee	509,192	5	9	9	0	0	20	3	4
Racine	67,707	1	0	0	0	0	0	1	0
Superior	39,671	0	0	1	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	0	0	0	0	0	0	0	2
Minneapolis	425,435	16	11	7	0	0	1	0	6
St. Paul	216,001	2	10	2	0	1	3	0	3
Iowa:									
Davenport	52,469	0	0	1	0	------	0	0	------
Des Moines	141,441	0	2	0	0	------	0	0	------
Sioux City	76,411	1	0	0	0	------	1	1	------
Waterloo	36,771	0	1	0	0	------	0	0	------
Missouri:									
Kansas City	367,481	0	2	1	0	0	2	1	8
St. Joseph	78,342	0	1	0	0	0	0	0	1
St. Louis	821,543	2	19	10	0	0	7	13	------
North Dakota:									
Fargo	2[illegible],403	0	0	0	0	0	0	0	0
Grand Forks	14,811	0	0	0	0	------	0	0	------
South Dakota:									
Aberdeen	15,036	0	0	0	0	------	0	0	------
Sioux Falls	30,127	0	0	0	0	------	1	0	------
Nebraska:									
Lincoln	60,941	4	1	1	0	0	2	3	0
Omaha	211,768	0	4	1	0	0	0	2	1
Kansas:									
Topeka	55,411	------	0	------	------	------	------	------	------
Wichita	88,367	0	1	0	0	0	0	0	0
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	1	1	0	0	0	0	0	0
Maryland:									
Baltimore	796,296	5	11	13	2	2	4	0	10
Cumberland	33,741	0	0	0	0	0	0	0	1
Frederick	12,035	0	0	0	0	0	0	0	0
District of Columbia:									
Washington	497,906	3	4	10	0	0	0	0	4
Virginia:									
Lynchburg	30,395	1	0	1	0	0	0	0	1
Norfolk	(1)	1	0	0	0	0	0	0	0
Richmond	186,403	0	3	2	0	1	0	2	4
Roanoke	58,208	0	1	2	0	0	0	0	0
West Virginia:									
Charleston	49,019	0	0	0	0	0	3	0	0
Wheeling	56,208	0	1	1	0	0	0	0	0
North Carolina:									
Raleigh	30,371	5	1	1	0	0	3	0	1
Wilmington	37,061	------	0	------	------	------	------	------	------
Winston-Salem	69,031	0	1	1	0	0	2	0	0
South Carolina:									
Charleston	73,125	0	0	0	1	0	0	0	2
Columbia	41,225	1	0	1	0	------	5	0	------
Greenville	27,311	0	0	0	0	0	0	0	0
Georgia:									
Atlanta	(1)	1	2	3	10	0	0	3	5
Brunswick	16,809	0	0	0	0	0	0	0	1
Savannah	93,134	0	0	1	2	0	2	0	0
Florida:									
Miami	69,754	0	------	1	0	0	0	0	
St. Petersburg	26,847	0	0	0	0	0	0	0	2
Tampa	94,743	2	0	0	0	0	0	1	0

[1] No estimate made.

City reports for week ended August 6, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	1	0	0	0	0	0	0
Louisville	305,935	0	2	1	1	0	0	0	5
Tennessee:									
Memphis	174,533	0	2	0	0	0	0	0	2
Nashville	136,220	0	0	1	0	0	1	1	1
Alabama:									
Birmingham	205,670	0	2	3	1	0	1	3	1
Mobile	65,955	0	0	1	0	1	0	0	1
Montgomery	46,481	0	0	0	0	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	0	0	0	0	--------	0	0	--------
Little Rock	71,216	1	0	1	0	0	9	0	1
Louisiana:									
New Orleans	414,493	0	4	6	1	1	1	0	4
Shreveport	57,857	0	0	0	0	0	1	1	3
Oklahoma:									
Oklahoma City	(1)	0	1	2	1	--------	0	0	4
Texas:									
Dallas	194,450	0	2	3	0	0	1	0	3
Galveston	48,375	0	0	1	0	0	0	0	1
Houston	164,954	0	2	3	0	0	1	1	3
San Antonio	198,069	0	1	8	0	0	0	0	1
MOUNTAIN									
Montana:									
Billings	17,971	1	0	0	0	0	0	0	0
Great Falls	29,883	0	0	0	0	0	2	0	0
Helena	12,037	1	0	0	0	0	1	0	0
Missoula	12,668	0	0	0	0	0	0	0	0
Idaho:									
Boise	23,042	0	1	0	0	0	0	0	0
Colorado:									
Denver	280,911	2	9	6	--------	1	2	2	2
Pueblo	43,787	0	1	3	0	0	0	0	0
New Mexico:									
Albuquerque	21,000	0	1	0	0	0	0	0	0
Utah:									
Salt Lake City	130,948	6	2	6	0	0	0	1	4
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	(1)	1	4	0	0	--------	32	2	--------
Spokane	108,897	4	1	1	0	--------	0	0	--------
Tacoma	104,455	1	2	2	0	0	4	0	1
California:									
Los Angeles	(1)	12	26	22	0	0	9	6	12
Sacramento	72,260	1	2	1	0	0	1	0	1
San Francisco	557,530	4	11	3	0	1	9	8	4

[1] No estimate made.

City reports for week ended August 6, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
NEW ENGLAND											
Maine:											
Portland	1	0	0	0	0	1	1	1	0	3	17
New Hampshire:											
Concord	1	0	0	0	0	0	0	0	0	0	4
Manchester	0	0	0	0	0	0	0	0	0	0	10
Nashua	0	0	0	0	0	0	0	0	0	0	6
Vermont											
Barre	0	0	0	0	0	2	0	0	0	0	4
Massachusetts											
Boston	16	10	0	0	0	8	3	0	0	19	169
Fall River	0	1	0	0	0	3	1	0	0	4	24
Springfield	1	1	0	0	0	2	0	0	0	0	26
Worcester	2	2	0	0	0	3	0	0	0	3	33
Rhode Island											
Pawtucket	0	0	0	0	0	0	0	0	0	0	8
Providence	2	8	0	0	0	2	1	2	0	3	47
Connecticut											
Bridgeport	2	0	0	0	0	0	0	0	0	0	20
Hartford	1	0	0	0	0	1	1	0	0	11	10
New Haven	1		0	0	0	1	2	0	0	13	24
MIDDLE ATLANTIC											
New York:											
Buffalo	5	8	0	0	0	13	1	0	0	21	121
New York	31	40	1	0	0	[1] 90	33	10	2	116	1,114
Rochester	3	2	0	0	0	1	1	4	0	6	56
Syracuse	3	0	0	0	0	3	0	0	0	3	43
New Jersey											
Camden	0	1	0	0	0	0	1	2	0	1	16
Newark	4	2	0	0	0	14	1	1	0	51	117
Trenton	0	0	0	0	0	3	1	0	0	7	31
Pennsylvania											
Philadelphia	18	17	0	1	0	32	11	8	0	34	354
Pittsburgh	9	2	1	0	0	12	2	2	1	13	133
Reading	0	0	0	0	0	0	1	0	0	10	17
EAST NORTH CENTRAL											
Ohio											
Cincinnati	3	5	0	1	0	8	3	0	0	2	111
Cleveland	10	8	1	0	0	11	4	2	0	31	144
Columbus	2	8	0	0	0	3	1	1	0	27	62
Toledo	3	3	1	0	0	7	2	0	1	13	49
Indiana											
Fort Wayne	1	0	0	1	0	1	1	0	0	1	15
Indianapolis	2	2	1	4	0	4	2	3	0	5	69
South Bend	1	1	1	0	0	0	0	0	0	0	8
Terre Haute	0	0	0	0	0	0	0	0	0	0	9
Illinois											
Chicago	27	35	0	6	0	46	5	6	0	161	575
Springfield	1	2	0	0	0	0	0	0	0	0	10
Michigan											
Detroit	23	24	3	0	0	25	5	1	0	90	223
Flint	3	6	1	1	0	1	0	0	0	1	19
Grand Rapids	2	4	0	0	0	0	0	0	0	0	23
Wisconsin:											
Kenosha	0	2	1	0	0	1	0	0	0	0	5
Madison	1	2	0	0	0	0	0	3	------	8	8
Milwaukee	6	11	1	0	0	9	1	1	0	30	102
Racine	1	0	1	0	0	0	0	0	0	4	9
Superior	2	4	1	0	0	0	0	0	0	0	5
WEST NORTH CENTRAL											
Minnesota:											
Duluth	4	1	1	0	0	0	0	0	0	0	25
Minneapolis	12	12	2	0	0	1	1	0	0	0	64
St. Paul	6	4	2	0	0	7	1	3	0	18	45

[1] Pulmonary tuberculosis only.

City reports for week ended August 6, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
WEST NORTH CENTRAL—con.											
Iowa:											
Davenport	0	0	0	0	-------	-------	0	0	-------	0	-------
Des Moines	2	1	0	2	-------	-------	0	0	-------	2	-------
Sioux City	1	0	1	0	-------	-------	0	0	-------	7	-------
Waterloo	0	0	0	0	-------	-------	0	0	-------	0	-------
Missouri:											
Kansas City	2	0	1	0	0	5	2	3	0	10	93
St. Joseph	0	1	0	0	0	3	0	0	0	0	31
St. Louis	6	2	1	0	0	5	7	6	1	26	160
North Dakota:											
Fargo	0	4	0	0	0	0	0	0	0	0	6
Grand Forks	0	0	0	0	-------	-------	0	0	-------	0	-------
South Dakota:											
Aberdeen	0	0	0	0	-------	-------	0	0	-------	1	-------
Sioux Falls	0	1	0	0	-------	-------	0	0	-------	0	-------
Nebraska:											
Lincoln	0	1	0	1	0	0	0	0	0	0	6
Omaha	1	3	1	0	0	1	1	0	0	1	47
Kansas:											
Topeka	1	-------	0	-------	-------	-------	1	-------	-------	-------	-------
Wichita	1	2	1	0	0	0	2	0	0	1	16
SOUTH ATLANTIC											
Delaware:											
Wilmington	0	0	0	0	0	3	0	0	0	0	17
Maryland:											
Baltimore	5	5	0	0	0	16	9	4	0	34	194
Cumberland	0	0	0	0	0	0	0	0	0	0	10
Frederick	0	0	0	0	0	0	0	0	0	0	4
District of Columbia:											
Washington	3	1	0	1	0	10	5	5	0	15	99
Virginia:											
Lynchburg	0	0	0	0	0	0	1	2	0	0	9
Norfolk	0	0	0	0	0	1	2	1	0	4	-------
Richmond	2	1	0	1	0	0	2	2	0	3	36
Roanoke	1	2	1	2	0	0	1	0	0	1	13
West Virginia:											
Charleston	0	1	1	0	0	1	2	0	1	1	17
Wheeling	1	1	0	0	0	1	0	1	0	0	17
North Carolina:											
Raleigh	0	0	0	0	0	0	1	0	0	3	10
Wilmington	0	-------	0	-------	-------	-------	1	-------	-------	-------	-------
Winston-Salem	0	1	0	0	0	0	1	6	0	9	13
South Carolina:											
Charleston	0	0	0	0	0	2	2	3	0	1	22
Columbia	0	0	0	0	-------	-------	1	2	-------	3	9
Greenville	0	0	0	0	0	0	1	0	0	2	3
Georgia:											
Atlanta	1	3	1	1	0	3	3	5	2	8	82
Brunswick	0	0	0	0	0	0	0	1	0	0	4
Savannah	0	0	0	0	0	4	1	0	0	0	29
Florida:											
Miami	-------	0	-------	0	0	1	-------	0	0	0	28
St. Petersburg	0	0	0	0	0	0	0	0	0	0	10
Tampa	0	0	0	0	0	3	0	0	0	0	26
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0	0	0	0	0	0	1	0	0	0	19
Louisville	1	2	0	0	0	0	6	2	1	2	71
Tennessee:											
Memphis	1	2	0	0	0	7	8	10	0	6	79
Nashville	0	1	1	0	0	3	7	5	0	3	46
Alabama:											
Birmingham	2	3	1	1	0	1	6	16	0	6	57
Mobile	0	0	0	0	0	1	1	0	0	0	22
Montgomery	0	2	0	0	0	0	2	3	0	0	-------

City reports for week ended August 6, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
WEST SOUTH CENTRAL											
Arkansas											
Fort Smith	1	0	0	0	-------	-------	1	0	-------	0	-------
Little Rock	0	0	0	0	0	7	3	1	1	0	-------
Louisiana											
New Orleans	1	3	0	2	0	4	4	6	2	3	160
Shreveport	0	0	0	0	0	1	1	2	1	0	21
Oklahoma:											
Oklahoma City	0	1	1	5	0	2	3	5	0	0	28
Texas											
Dallas	2	0	1	2	0	1	4	0	0	0	48
Galveston	0	1	0	0	0	2	1	1	0	0	13
Houston	1	2	0	0	0	2	1	2	1	0	53
San Antonio	0	0	0	0	0	7	2	0	0	1	41
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	0	0	0	0	3	3
Great Falls	0	0	0	1	0	0	1	0	0	0	8
Helena	0	0	0	0	0	0	0	1	0	0	4
Missoula	0	0	0	0	0	1	0	0	0	0	4
Idaho											
Boise	0	0	0	0	0	0	0	0	0	0	6
Colorado											
Denver	8	5	2	0	0	7	2	1	1	13	60
Pueblo	0	7	0	0	0	1	0	1	1	0	6
New Mexico											
Albuquerque	0	0	0	0	0	1	0	0	0	1	5
Utah											
Salt Lake City	1	2	0	1	0	3	2	2	0	20	37
Nevada.											
Reno	0	0	0	0	0	0	0	0	0	0	3
PACIFIC											
Washington											
Seattle	3	3	2	1	-------	-------	1	2	-------	8	-------
Spokane	2	0	2	6	-------	-------	0	0	-------	5	-------
Tacoma	2	1	1	1	0	0	0	0	0	11	17
California:											
Los Angeles	7	14	4	0	0	20	4	2	0	14	231
Sacramento	1	1	0	0	0	0	1	1	0	0	24
San Francisco	4	4	1	0	0	9	2	0	0	8	163

Division, State, and city	Meningococcus meningitis: Cases	Meningococcus meningitis: Deaths	Lethargic encephalitis: Cases	Lethargic encephalitis: Deaths	Pellagra: Cases	Pellagra: Deaths	Poliomyelitis (infantile paralysis): Cases, estimated expectancy	Poliomyelitis (infantile paralysis): Cases	Poliomyelitis (infantile paralysis): Deaths
NEW ENGLAND									
New Hampshire:									
Manchester	0	0	0	1	0	0	0	0	0
Massachusetts									
Boston	0	0	0	0	0	0	1	4	2
Rhode Island									
Providence	0	1	0	0	0	0	0	0	0
Connecticut									
Bridgeport	0	0	0	0	0	0	0	1	0
Hartford	0	0	1	0	0	0	0	0	0

City reports for week ended August 6, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
MIDDLE ATLANTIC									
New York:									
Buffalo	0	0	0	0	0	0	1	2	0
New York	3	1	0	4	0	0	5	19	4
New Jersey:									
Newark	0	0	0	0	0	0	0	1	0
Pennsylvania:									
Philadelphia	0	0	1	2	1	1	0	1	1
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	0	1	0	0	0	0	0	4	0
Toledo	0	0	0	0	0	0	0	1	0
Indiana:									
Indianapolis	0	0	0	0	0	0	0	1	0
Illinois:									
Chicago	5	3	1	0	0	0	2	5	2
Michigan:									
Detroit	0	0	2	1	1	1	0	1	2
Flint	0	0	0	0	0	0	0	1	0
Wisconsin:									
Madison	0	0	0	0	0	0	0	0	1
Milwaukee	1	3	0	0	0	0	0	1	0
Superior	0	0	0	0	0	0	0	1	0
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	2	0	0	0	0	0	0	0	0
Missouri:									
Kansas City	1	2	0	0	0	0	1	1	0
SOUTH ATLANTIC									
District of Columbia:									
Washington	0	0	1	0	1	1	0	0	0
Virginia:									
Richmond	0	0	0	0	0	0	0	0	1
North Carolina:									
Raleigh	0	0	0	0	0	1	0	0	0
South Carolina:									
Charleston	0	0	0	0	3	2	0	0	0
Georgia:									
Atlanta	1	1	0	0	4	1	0	0	0
Savannah [2]	0	0	0	0	2	1	0	0	0
EAST SOUTH CENTRAL									
Tennessee:									
Memphis	0	0	0	0	2	1	0	0	0
Nashville	1	1	0	0	3	2	0	0	0
Alabama:									
Birmingham	0	2	0	0	1	0	0	0	0
Mobile [2]	0	0	0	0	2	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	0		0		0		0	1	
Little Rock	0	0	0	0	0	3	0	0	0
Louisiana:									
New Orleans	0	0	0	0	1	1	0	2	
Oklahoma:									
Oklahoma City	0	0	0	2	0	0	0	0	0
Texas:									
Dallas	0	0	0	0	0	2	0	1	0
Houston	0	0	0	0	0	0	0	1	0

[1] Rabies in man: Racine, Wis., 1 case.
[2] Typhus fever: Savannah, Ga., 3 cases; Tampa, Fla., 4 cases; and Mobile, Ala., 1 case.

City reports for week ended August 6, 1927—**Continued**

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
MOUNTAIN									
Colorado:									
Denver	1	1	0	0	0	0	0	0	0
New Mexico:									
Albuquerque	0	0	0	0	0	0	0	1	0
Utah:									
Salt Lake City	0	1	0	0	0	0	0	1	0
PACIFIC									
California.									
Los Angeles	1	0	0	0	1	1	0	5	1
Sacramento	0	0	1	1	0	0	0	3	4

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended August 6, 1927, compared with those for a like period ended August 7, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, July 3 to August 6, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927	Aug. 7, 1926	Aug. 6, 1927
101 cities	102	121	94	114	90	[2] 93	80	[3] 94	78	[4] 79
New England	57	91	78	132	33	63	40	91	40	[5] 69
Middle Atlantic	120	197	101	165	109	106	103	104	88	92
East North Central	106	102	110	93	98	108	83	102	104	80
West North Central	93	38	107	54	95	54	85	56	52	[6] 43
South Atlantic	65	85	32	83	34	[7] 87	20	[8] 90	43	[9] 67
East South Central	5	41	21	36	10	25	21	[10] 32	10	[10] 32
West South Central	43	50	26	71	39	[11] 129	39	[11] 73	39	92
Mountain	118	108	109	81	64	99	91	117	118	[12] 138
Pacific	179	86	158	113	174	65	148	[13] 121	102	76

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.
[2] Norfolk, Va., and Fort Smith, Ark., not included
[3] Greenville, S. C., Brunswick, Ga., Covington, Ky., Fort Smith, Ark., Seattle, Wash., and Spokane, Wash., not included.
[4] Barre, Vt., New Haven, Conn., Topeka, Kans., Wilmington, N. C., Greenville, S. C., Brunswick, Ga., Covington, Ky., and Reno, Nev., not included.
[5] Barre, Vt., and New Haven, Conn., not included.
[6] Topeka, Kans., not included.
[7] Norfolk, Va., not included.
[8] Greenville, S. C., and Brunswick, Ga., not included.
[9] Wilmington, N. C., Greenville, S. C., and Brunswick, Ga., not included.
[10] Covington, Ky., not included.
[11] Fort Smith, Ark., not included.
[12] Reno, Nev., not included.
[13] Seattle, Wash., and Spokane, Wash., not included.

Summary of weekly reports from cities, July 3 to August 6, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

MEASLES CASE RATES

	Week ended—									
	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927	Aug. 7, 1926	Aug. 6, 1927
101 cities	311	190	226	155	164	[2] 109	108	[3] 58	70	[4] 47
New England	245	299	179	241	108	197	83	169	83	[5] 92
Middle Atlantic	211	154	129	122	108	92	63	45	42	43
East North Central	481	182	412	110	279	90	191	47	113	29
West North Central	417	93	192	105	184	48	93	40	58	[6] 28
South Atlantic	291	277	201	221	127	[7] 141	114	[8] 70	47	[9] 35
East South Central	284	76	171	61	124	25	93	[10] 49	41	[10] 11
West South Central	47	113	17	105	13	[11] 56	9	[11] 52	9	55
Mountain	264	135	191	171	173	99	128	63	137	[12] 46
Pacific	335	539	327	448	212	280	121	[13] 65	121	144

SCARLET FEVER CASE RATES

101 cities	127	99	94	84	82	[2] 64	73	[3] 63	61	[4] 52
New England	158	174	99	130	85	100	118	107	104	[5] 56
Middle Atlantic	129	123	73	91	75	50	52	39	38	36
East North Central	145	91	119	89	89	75	84	87	79	75
West North Central	206	91	186	71	127	79	143	79	101	[6] 59
South Atlantic	63	54	45	56	35	[7] 41	34	[8] 41	39	[9] 28
East South Central	52	46	52	31	93	31	62	[10] 43	31	[10] 54
West South Central	34	42	52	39	82	[11] 47	39	[11] 26	13	25
Mountain	55	117	91	225	64	99	36	153	64	[12] 129
Pacific	121	60	94	50	91	92	86	[13] 65	83	60

SMALLPOX CASE RATES

101 cities	7	16	7	9	6	[2] 10	5	[3] 5	8	[4] 6
New England	0	0	0	0	0	0	0	0	0	[5] 0
Middle Atlantic	0	0	1	0	0	0	0	0	1	0
East North Central	7	15	6	17	8	13	6	9	9	9
West North Central	28	34	26	14	14	12	4	6	14	[6] 0
South Atlantic	9	24	6	9	6	[7] 12	2	[8] 4	11	[9] 9
East South Central	0	51	5	25	10	36	21	[10] 11	16	[10] 5
West South Central	4	0	13	8	13	[11] 9	4	[11] 13	13	17
Mountain	9	45	9	36	27	117	9	27	9	[12] 18
Pacific	24	73	21	13	8	21	32	[13] 10	24	21

[2] Norfolk, Va., and Fort Smith, Ark., not included.
[3] Greenville, S. C., Brunswick, Ga., Covington, Ky., Fort Smith, Ark., Seattle, Wash., and Spokane, Wash., not included.
[4] Barre, Vt., New Haven, Conn., Topeka, Kans., Wilmington, N. C., Greenville, S. C., Brunswick, Ga., Covington, Ky., and Reno, Nev., not included.
[5] Barre, Vt., and New Haven, Conn., not included.
[6] Topeka, Kans., not included.
[7] Norfolk, Va., not included.
[8] Greenville, S. C., and Brunswick, Ga., not included.
[9] Wilmington, N. C., Greenville, S. C., and Brunswick, Ga., not included.
[10] Covington, Ky., not included.
[11] Fort Smith, Ark., not included.
[12] Reno, Nev., not included.
[13] Seattle, Wash., and Spokane, Wash., not included.

Summary of weekly reports from cities, July 3 to August 6, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927	Aug. 7, 1926	Aug. 6, 1927
101 cities	13	17	22	22	18	[2] 19	30	[3] 21	28	[4] 25
New England	9	14	12	19	9	16	14	9	12	[5] 8
Middle Atlantic	7	8	11	11	9	8	23	13	19	13
East North Central	5	5	6	8	6	9	10	11	12	9
West North Central	16	10	14	16	12	14	22	16	18	[6] 24
South Atlantic	43	34	58	43	47	[7] 50	54	[8] 37	65	[9] 58
East South Central	52	163	165	153	134	122	243	[10] 124	181	[10] 195
West South Central	30	21	56	75	30	[11] 47	47	[11] 47	43	50
Mountain	0	18	0	27	46	27	36	72	27	[12] 46
Pacific	13	10	21	8	8	16	11	[13] 24	29	13

INFLUENZA DEATH RATES

	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927	Aug. 7, 1926	Aug. 6, 1927
95 cities	4	[14] 3	4	3	3	[7] 3	2	[15] 3	2	[4] 2
New England	7	1	0	5	2	0	0	2	0	[5] 0
Middle Atlantic	1	4	4	2	2	4	1	4	2	1
East North Central	7	3	4	1	4	2	1	1	1	0
West North Central	0	0	0	2	2	2	0	0	0	[6] 2
South Atlantic	0	2	6	0	4	[7] 2	2	[8] 2	4	[9] 6
East South Central	16	15	21	5	5	15	5	[10] 11	0	[10] 5
West South Central	4	[14] 0	9	9	9	0	22	9	4	4
Mountain	0	0	9	18	9	9	0	0	9	[12] 9
Pacific	4	3	4	7	4	3	4	3	11	3

PNEUMONIA DEATH RATES

	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927	Aug. 7, 1926	Aug. 6, 1927
95 cities	67	[14] 58	60	57	54	[7] 56	48	[15] 49	54	[4] 47
New England	54	60	57	56	33	56	33	49	54	[5] 36
Middle Atlantic	73	64	74	61	64	59	41	56	56	46
East North Central	65	49	46	45	47	55	47	42	42	44
West North Central	53	54	36	31	40	21	57	17	51	[6] 45
South Atlantic	72	59	55	63	57	[7] 75	51	[8] 43	68	[9] 53
East South Central	119	82	109	66	98	46	62	[10] 49	52	[10] 54
West South Central	53	[14] 86	79	69	53	65	71	86	97	69
Mountain	36	99	36	197	64	45	55	36	64	[12] 55
Pacific	53	55	46	97	35	72	71	79	57	62

[2] Norfolk, Va., and Fort Smith, Ark., not included.
[3] Greenville, S. C., Brunswick, Ga., Covington, Ky., Fort Smith, Ark., Seattle, Wash., and Spokane, Wash., not included.
[4] Barre, Vt., New Haven, Conn., Topeka, Kans., Wilmington, N. C., Greenville, S. C., Brunswick, Ga., Covington, Ky., and Reno, Nev., not included.
[5] Barre, Vt., and New Haven, Conn., not included.
[6] Topeka, Kans., not included.
[7] Norfolk, Va., not included.
[8] Greenville, S. C., and Brunswick, Ga., not included.
[9] Wilmington, N. C., Greenville, S. C., and Brunswick, Ga., not included.
[10] Covington, Ky., not included.
[12] Reno, Nev., not included.
[13] Seattle, Wash., and Spokane, Wash., not included.
[14] San Antonio, Tex., not included.
[15] Greenville, S. C., Brunswick, Ga., and Covington, Ky., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

THE FAR EAST

Report for week ended July 23, 1927.—The following report for the week ended July 23, 1927, was transmitted by the Eastern Bureau of the health section of the Secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Egypt: Port Said	1	0	0	0	0	0
Arabia: Aden	0	0	0	0	1	0
Iraq. Basra [1]	0	0	5	5	0	0
British India:						
Bombay	----	2	----	10	17	10
Madras	----	0	----	35	6	0
Calcutta	----	0	----	11	11	8
Bassein	----	7	----	1	0	0
Rangoon	----	5	----	0	4	2
Vizagapatam	----	0	----	0	1	1
Siam. Bangkok	0	0	4	0	1	0

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Dutch East Indies:						
Surabaya	0	0	0	0	2	0
Banjermasin	0	0	0	0	11	0
French Indo-China:						
Saigon and Cholon	0	0	1	0	1	0
Tourane	0	0	1	2	0	0
Haiphong	0	0	9	7	0	0
Hong Kong	0	0	0	0	1	1
Manchuria Mukden	0	0	0	0	1	0
Kwantung Dairen	0	0	0	0	1	0
Japan. Nagasaki	0	0	0	0	2	0

[1] Cholera is also reported at Mohammerah

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Arabia.—Jeddah, Perim.

Persia.—Bender-Abbas, Bushire, Lingah.

Ceylon.—Colombo.

British India.—Karachi, Chittagong, Cochin, Tuticorin, Negapatam, Moulmein.

Portuguese India.—Nova Goa.

Federated Malay States.—Port Swettenham.

Straits Settlements.—Singapore, Penang.

Dutch East Indies.—Batavia, Banjermasin, Pontianak, Semarang, Menado, Cheribon, Makassar, Balikpapan, Padang, Belawan-Deli, Tarakan, Sabang.

Sarawak.—Kuching.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

Portuguese Timor.—Dilly.

Philippine Islands.—Manila, Iloilo, Jolo, Cebu, Zamboanga.

China.—Amoy, Shanghai, Tientsin, Tsingtao.

Macao

Formosa.—Keelung, Takao.

Chosen.—Chemulpo, Fusan.

ASIA—continued

Manchuria.—Yingkow, Antung, Harbin, Changchun.

Kwantung.—Port Arthur.

Japan.—Yokohama, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns.

New Guinea.—Port Moresby.

New Britain Mandated Territory.—Rabaul and Kokopo.

New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.

Samoa.—Apia.

New Caledonia.—Noumea.

Fiji.—Suva.

Hawaii.—Honolulu.

Society Islands.—Papeete.

AFRICA

Egypt.—Alexandria, Suez.
Anglo-Egyptian Sudan.—Port Sudan, Suakin.
Eritrea.—Massaua.
French Somaliland.—Djibouti.
British Somaliland.—Berbera.
Italian Somaliland.—Mogadiscio.
Zanzibar.—Zanibar.
Kenya.—Mombasa.
Tanganyika.—Dar-es-Salaam.
Seychelles.—Victoria.

AFRICA—continued

Portuguese East Africa.—Mozambique, Beira, Lourenço-Marques.
Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.
Reunion.—Saint Denis.
Mauritius.—Port Louis.
Madagascar.—Majunga, Tamatave, Diego-Suarez.

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from:

Dutch East Indies.—Palembang, Samarinda.
China.—Canton.
Union of Socialist Soviet Republics.—Vladivostok.

Belated information:

Week ended July 16: *Karikal*, 1 fatal cholera case.

Movement of infected ships:

Penang.—The pilgrim ship *Peleus* arrived from Jeddah on July 20 infected with smallpox.

Other epidemiological information:

The Sanitary Maritime and Quarantine Council of Egypt reports that, during the week ended Wednesday, July 27, 5,240 pilgrims arrived at El Tor from Yambos. No infectious disease occurred. The representative of the Sanitary Maritime and Quarantine Council reports the occurrence in the Hedjaz of 7 smallpox cases and 4 deaths during the week ended July 15.

BRAZIL

Yellow fever—Recrudescence in Bahia, Brazil—1926.—Information received relative to yellow fever in Bahia, Brazil, in the year 1926, indicates that the cases which occurred in the city of Bahia were due to infection imported from the interior. Epidemic conditions were stated to have been averted by maintaining a low mosquito index.

Water supply.—During the year under report, the water supply was stated to have failed in many parts of the city of Bahia.

CANADA

Communicable diseases—Week ended July 30, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases from seven Provinces of Canada for the week ended July 30, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever			2		2			4
Influenza				2	1			3
Lethargic encephalitis				1	1			2
Smallpox				14	2	9	7	32
Typhoid fever		2	46	10	3	4		65

Communicable diseases—Ontario—July, 1927. (Comparative).—During the month of July, 1927, communicable diseases were reported in the Province of Ontario as follows:

Disease	1927		1926	
	Cases	Deaths	Cases	Deaths
Cerebrospinal meningitis	2	2	6	3
Chicken pox	550		503	
Diphtheria	194	18	183	14
Dysentery		2		
Erysipelas	2			
Gonorrhea	130		131	
German measles	126		150	
Influenza	2	4		10
Lethargic encephalitis	3	2	5	4
Measles	915		1,955	
Mumps	112		37	
Pellagra		1		
Pneumonia		104		137
Poliomyelitis (infantile paralysis)	3	1		
Scarlet fever	240	3	289	3
Septic sore throat	1			
Smallpox	97		41	
Syphilis	89	3	118	
Tuberculosis	135	76	177	72
Typhoid fever	84	2	57	3
Whooping cough	310	6	325	

Communicable diseases—Quebec—Week ended August 13, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended August 13, 1927, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	1	Measles	25
Chicken pox	2	Scarlet fever	33
Diphtheria	39	Tuberculosis	73
German measles	5	Typhoid fever	25
Influenza	1	Whooping cough	35

Typhoid fever—Montreal—January 2-August 6, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	Apr. 30, 1927	105	23
Jan. 15, 1927	4	3	May 7, 1927	106	19
Jan. 22, 1927	1	2	May 14, 1927	367	16
Jan. 29, 1927	3	1	May 21, 1927	770	26
Feb. 5, 1927	1	0	May 28, 1927	353	38
Feb. 12, 1927	0	0	June 4, 1927	239	37
Feb. 19, 1927	1	2	June 11, 1927	128	36
Feb. 26, 1927	1	1	June 18, 1927	86	
Mar. 5, 1927	9	1	June 25, 1927	75	23
Mar. 12, 1927	203	4	July 2, 1927	66	21
Mar. 19, 1927	383	14	July 9, 1927	52	10
Mar. 26, 1927	568	22	July 16, 1927	39	4
Apr. 2, 1927	649	48	July 23, 1927	22	9
Apr. 9, 1927	386	40	July 30, 1927	23	10
Apr. 16, 1927	175	38	Aug. 6, 1927	16	5
Apr. 23, 1927	125	43	Aug. 13, 1927	20	5

CHILE

Typhoid fever—Typhus fever—April 16-May 31, 1927.—During the period April 16 to May 31, 1927, 75 cases of typhoid fever with

3 deaths were reported in the Republic of Chile. During the same period 10 cases of typhus fever with 1 death were reported. The occurrence was distributed as follows:

Typhoid fever. Santiago (population, 553,498)—cases, 11. Valparaiso (population, 182,422)—cases, 14; deaths, 2. Talca (population, 36,079)—cases, 2. Antofagasta (population, 51,531)—2 cases. Curico (population, 15,879), 2 cases; and at Portreillos, with 12,000 population, 8 cases. In three cities of 15,000 population, 9 cases with 1 death were reported, and in 10 cities of less than 10,000, 27 cases with 2 deaths.

Typhus fever.—During the same period 10 cases of typhus fever with 1 death were reported, occurring as follows, according to locality: Antofagasta, 1; La Calera, 1; Puerto Montt, 1; Valparaiso, 2; Santiago, 5 cases with 1 death.

CUBA

Communicable diseases—Habana—July, 1927.—During the month of July, 1927, communicable diseases were reported in Habana, Cuba, as follows:

Disease	New cases	Deaths	Remaining under treatment July 31, 1927
Chicken pox	2		24
Diphtheria	3		3
Filariasis			1
Leprosy	2		15
Malaria [1]	91	2	55
Measles	21		46
Paratyphoid fever	1		1
Scarlet fever	4		2
Typhoid fever [1]	72	12	218

[1] Many of these cases from the interior

DOMINICAN REPUBLIC

Vital statistics, 1926.—The following table shows the population of the important communes which contain the principal cities of the Dominican Republic, as well as the total deaths in the year 1926, and the births.

Communes	Population	Deaths	Births
Santo Domingo	49, 177	809	1, 080
Barahona	12, 908	134	276
La Vega	68, 606	300	2, 340
Moca	50, 057	424	1, 621
Santiago	84, 380	647	3, 551
Puerto Plata	33, 141	236	1, 466
Azua	20, 979	119	285
San Pedro de Macoris	33, 139	424	894
La Romana	10, 093	243	530
Monte Christi	9, 049	47	161

During the year 1926 the following diseases are noted as important causes of the deaths, the total of which in that year throughout the Republic was 8,387:

Disease	Deaths	Disease	Deaths
Typhoid fever	226	Bronchitis	229
Malaria	742	Broncho-pneumonia	162
Influenza	143	Pneumonia	466
Dysentery	231	Diseases of the stomach	387
Tetanus	484	Diarrhea	158
Tuberculosis	585	Diseases of the liver	142
Syphilis	76	Intestinal diseases	317
Heart disease	304	Dropsy	479

Water supply.—There is only one city in the Dominican Republic which has a municipal water supply provided by an aqueduct. That is the city of Barahona. An American corporation which operates a large sugar estate at Barahona has constructed an aqueduct which brings water from the near-by hills for the estate and also supplies the city of Barahona. In the city of Santo Domingo, the capital of the Republic, and in the other cities of the Republic, the water supply is dependent upon rain water which is collected in cisterns, usually on the roofs of houses or in old wells which are utilized during the dry season. A contract was let in October, 1926, and work is now being performed on the construction of an aqueduct and sewerage system for the city of Santo Domingo, the capital of the Republic. It is believed that this will not be in operation for at least two years. The habit which obtains among the native population of drinking rain water and also utilizing water from wells is productive of many intestinal disorders, particularly dysentery, which is very prevalent in the summer season. Foreigners residing in the cities of the Republic do not drink the rain water from the cisterns unless it is boiled.

There are no sewerage systems in any of the cities of the Dominican Republic.

DENMARK

Vital statistics—1916–1926.—The statistical department of the Danish Government has published data regarding vital statistics in Denmark for the year 1926.

The table below shows the marriage, birth, and death rates, as well as the excess birth rate, for each 1,000 of the population, for the year 1926, for the preceding five years, and the average for the period 1916–1920:

Rates per 1,000

	Marriages	Births	Deaths	Birth excess
1916–1920 (average)	7.3	24.0	13.1	10.9
1921	8.1	24.0	11.0	13.0
1922	7.9	22.2	11.9	10.3
1923	8.0	22.3	11.3	11.0
1924	7.8	21.8	11.2	10.6
1925	7.5	21.0	10.8	10.2
1926	7.5	20.5	11.0	9.5

EGYPT

Communicable diseases—Week ended June 24, 1927.—During the week ended June 24, 1927, communicable diseases were reported in Egypt as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Influenza	45		Typhoid fever	61	
Smallpox	3	1	Typhus fever	17	1

ITALY

Mortality—1926—Department of Tuscany.—Information received shows the occurrence of 40,753 deaths from all causes (including 2,644 stillbirths) in the Department of Tuscany, Italy, during the year 1926, as compared with 40,504 deaths in the year 1925.

Morbidity.—Cases of infectious diseases were reported from January 1 to April 17, 1927, as follows: Chicken pox, 437; diphtheria and croup, 519; epidemic cerebrospinal meningitis, 12; lethargic encephalitis, 5; measles, 488; poliomyelitis, acute anterior, 6; scarlet fever, 131; smallpox, 5; typhoid fever, 227. Tuberculosis was stated to have been general, with 177 deaths in the city of Leghorn alone from August 1, 1925, to July 30, 1926 (population, 125,000).

JAMAICA

Smallpox (alastrim)—June 26–July 30, 1927.—During the five weeks from June 26 to July 30, 1927, 15 cases of smallpox (reported as alastrim) were notified in the island of Jamaica, occurring at localities other than Kingston.

Other communicable diseases.—During the same period other communicable diseases were reported as follows:

Disease	Cases		Disease	Cases	
	Kingston	Other localities		Kingston	Other localities
Chicken pox	4	9	Puerperal fever	1	1
Dysentery	12	9	Smallpox		15
Leprosy	1	1	Tuberculosis	32	43
Poliomyelitis		1	Typhoid fever	24	92

PERSIAN GULF

Cholera—At ports of the Shat-el-Arab.—Information received under date of August 2, 1927, shows cholera present in the port of Abadan, an important oil port of the Shat-el-Arab, 159 cases being reported to July 31, 1927. Cholera was reported present also at Basra and Mohammerah.

TASMANIA

Vital statistics—1924–1926.—The birth and death rates in Tasmania for the year 1926 are the lowest ever recorded. The following items are taken from a summary issued by the Government statistician of Tasmania.

Births.—There were 4,988 births registered in 1926, against 5,218 in 1925. The birth rate for 1926 was 23.5, compared with 24.5 in 1925 and 25.1 in 1924.

The following table gives a comparison between town and country birth rates:

	1926	1925	1924	1911–1920
Urban districts	21.0	22.4	22.9	[1] 26.9
Rural districts	25.2	25.9	26.6	[1] 29.7
Tasmania	23.51	24.45	25.07	28.12

[1] A rough estimate.

Deaths.—Deaths registered in 1926 numbered 1,912, as against 1,996 in 1925. The death rate in 1926 was 9.0 (the lowest on record), compared with 9.4 in 1925 and 9.9 in 1924. Figures generally were lower than in 1925, the Midland division being the only district to show a marked increase.

Infant mortality.—There were 232 infant deaths in 1926, compared with 287 in 1925 and 296 in 1924. The infant death rate for 1926 (46.5 infant deaths per 1,000 births) is the lowest on record. The rate has been below normal since 1921, when it was high on account of an epidemic of summer diarrhea.

Causes of death (general).—As usual, heart disease accounted for the greatest number of deaths. There were 282 deaths from this cause, compared with a decennial average of 245. Cancer 185, and diabetes 31, were 14 and 7 above their respective averages. Influenza accounted for 41 deaths, exactly the same number as the decennial average; but if the influenza epidemic of 1919 is excluded, deaths from this disease were about 20 above the average. In 1925 there were only 8 deaths from this cause.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended August 26, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China				
Canton	May 1-July 9	9	3	
Shanghai	Reported Aug 19			Present
Swatow	July 3-9	12		Believed to be incomplete.
India	June 12-18			Cases, 10,665 deaths, 6,389.
Indo-China (French)	June 18 30	5		
Iraq				
Basra	Reported Aug 2			Present
Persia	do	159		On Persian Gulf.
Philippine Islands:				
Province—				
Bulacan	July 8	1	1	
Siam	June 19-25	21	11	
Bangkok	do	4	1	

PLAGUE

Place	Date	Cases	Deaths	Remarks
Ceylon				
Colombo	June 19-July 2	4	3	Plague rodents, 2.
Ecuador.				
Guayaquil	June 1-30			Rats taken, 25,069; found infected, 28
Egypt.				
Port Said	July 21	1		
India	June 12-18			Cases, 141; deaths, 95.
Madras	do	33	17	
Rangoon	June 26-July 2	5	4	
Greece				
Patras	Reported Aug 5	1		
Madagascar	June 1-15			Cases, 16; deaths, 14.
Ambositra	do	3	3	
Moramanga	do	2	2	Bubonic.
Tananarive	do	11	9	Including Tananarive town: Cases, 2; deaths, 2.
Senegal:				
Baol	July 18-24	3	2	
Cayor District	do	76	43	
Dakar	do	18	10	
Rufisque	do	21	19	
Thies	do	2		
Siam	June 19-25	1		

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended August 26, 1927—Continued

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria:				
Oran	July 11-31	6		
Brazil:				
Rio de Janeiro	July 17-29	2	3	
Canada	July 24-30	32		
Alberta	do	7		
Calgary	July 31-Aug. 6	3		
Manitoba	July 24-30	2		
Ontario	do	14		
Ottawa	July 31-Aug 13	9		
Saskatchewan	July 24-30	9		
Regina	July 31-Aug. 6	1		
China:				
Antung	July 4-10	1		
Hong Kong	July 3-9	1	1	
Tientsin	do	2		
Ecuador:				
Guayaquil	June 1-30	2		
Egypt:				
Cairo	Feb. 19-25	3	1	
Great Britain:				
England and Wales	July 17 30			Cases, 380.
Leeds	do	2		
Newcastle on Tyne	July 24-30	1		
Sheffield	July 10-23	5		
Greece				
Saloniki	July 12-18		1	
India	June 12-18			Cases, 4,692; deaths, 1,249.
Rangoon	June 25-July 2	7	3	
Jamaica	June 26-July 30	15		Reported as alastrim.
Japan:				
Nagasaki	July 18-24		1	
Mexico.				
San Luis Potosi	July 24-Aug. 6		3	
Portugal:				
Lisbon	July 17-23	2		
Siam	June 19-25	19	3	
Bangkok	do	2		

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	July 11-20	1		
Oran	do	1		
Do	July 21-31	1		
Chile	Apr. 16-May 31	10	1	
Antofagasta	do	1		
La Calera	do	1		
Puerto Montt	do	1		
Santiago	do	5	1	
Valparaiso	do	2		
Chosen:				
Chemulpo	June 1-30	11	1	
Gensan	do	1		
Seoul	do	21	2	
Egypt	June 18-24	17	1	
Cairo	Feb. 19-25	2	1	
Mexico:				
Mexico City	July 17-30	8		Including municipalities in Federal district.
San Luis Potosi	July 31-Aug. 6		1	
Poland	June 5-11	47	5	
Union of South Africa:				
Kentani District	June 26-July 2			Outbreaks.
Umzimkulu District	do			Do.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to August 19, 1927[1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-28	1	1	
Kulangsu	June 21	1		
Shanghai	June 19-25	2		
Swatow	May 15-July 2	24	12	
India	Apr. 17-June 11			Cases, 48,780; deaths, 28,544.
Bombay	May 8-June 14	2	1	
Calcutta	May 8-June 18	396	247	
Karachi	May 29-June 4	1	1	
Madras	June 19-25	5	3	
Rangoon	May 8-June 25	15	11	
India, French Settlements in	Mar. 30-May 28	5	3	
Indo-China (French)	Apr. 1-June 20			Cases, 8,998.
Annam	do	1,147		
Cambodge	do	197		
Cochin-China	do	1,049		
Saigon	June 4-17	4	3	
Tonkin	Apr. 1-June 30	6,605		
Philippine Islands:				
Bulacan Province	June 7	1		At Mambog, Malalos.
Leyte Province—				
Barugo	June 29	1	1	
Carigara	June 23	1	1	Final diagnosis not received.
Palo	May 18	1		
Siam	May 1-June 18			Cases, 138; deaths, 74.
Bangkok	do	32	11	
On vessel:				
Steamship Adrastus	Reported Aug. 6	1	1	At Yokohama, Japan.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Argentina	Jan. 1-June 30			Cases, 71; deaths, 44.
Buenos Aires	Apr. 10-May 7	4	3	
Cordoba	Jan. 11-Mar. 23	50	29	
Corrientes	June 1	1	1	
Entre Rios	Mar. 29-Aug. 1	3	1	
Santa Fe	Apr. 28-May 16	4	3	
Territory—				
Chaco—				
Barranqueras	May 29	2	2	
Formosa	June 25	3	2	
Pampa	Reported July 6	2		
City—				
Rosario	May 7	1	1	
Sante Fe	May 10	4	2	
Azores:				
Ribeira Grande	June 12-18			9 miles from port.
St. Michaels Island	May 15-June 3	2		
British East Africa:				
Kenya	Apr. 24-June 11	18	14	
Nairobi	May 22-28	6		
Tanganyika	Mar. 29-May 28		37	
Uganda	Jan. 1-Feb. 28	138	121	
Do	Mar. 27-June 11	266	207	
Canary Islands:				
Laguna District—				
Tejina	June 17	1		
Ceylon:				
Colombo	May 1-June 11	13	8	Plague rats, 4.
Egypt	May 21-July 8			Cases, 7; deaths, 2.
Alexandria	June 4-10	1		
Biba	do	1		At Nana.
Beni-Souef	June 4-July 13	5	2	
Dakhalia	June 24-July 9	6	1	
Port Said	June 24-July 13	3	1	
Tanta District	June 4-10	1		
Greece	May 1-31	1	1	
Athens	June 1-30	1		Including Piraeus.
Patras	May 30-June 11	4		
Hawaii Territory:				
Hamakua	July 15			1 plague rodent.

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to August 19, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
India	Apr 17-June 11			Cases, 21,204; deaths, 7,922.
Bombay	May 8-June 25	71	63	
Madras	May 1-June 11	86	33	
Rangoon	May 8-June 25	22	20	
Indo-China (French)	Apr. 1-June 20	21		
Kwang-Chow-Wan	May 21-June 10	57		
Iraq:				
Baghdad	Apr. 8-May 28	12	1	
Java				
Batavia	May 1-June 25	120	121	Province.
East Java and Madura	May 22-June 18	23	23	
Pasoeroean Residency	May 9			Outbreak reported at Ngadiwono.
Surabaya	Apr. 17-May 7	24	24	
Madagascar				Mar. 16-Apr. 30, 1927: Cases, 256; deaths, 135.
Province—				
Ambositra	Mar. 16-May 31	70	64	
Antsirabe	Mar. 16-May 15	8	8	
Miarinarivo (Itasy)	Mar. 16-May 31	45	45	
Moramanga	do	18	17	
Tananarive	do	185	161	
Tananarive Town	do	20	18	
Peru	Apr 1-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	do	13	4	
Lima City	Apr. 1-30	5	1	
Senegal	May 23-July 17			Cases, 212; deaths, 121.
Baol	June 2-July 17	24	12	
Cayor Frontier	July 4-10	7	5	
Dakar	June 20-July 17	34	22	
Facel	July 6	17	8	
Guindel	June 20-26	11	2	
M'Bour	July 6-10	28	23	
Medina	June 13-19	2	2	
Pout	July 4-10	1		
Rufisque	May 23-July 17	104	70	
Thies District	do	24	9	
Tivaouane	June 2-July 17	50	32	
Siam	Apr 1-June 11			Cases, 9; deaths, 7.
Bangkok	May 8-June 11	2	1	
Tunisia	Apr 21-May 31	131		
Turkey				
Constantinople	May 13-19	1		
Union of South Africa:				
Cape Province—				
Maraisburg District	May 1-14	2	2	Native.
On vessel.				
S. S. Averoff	June 24-30	1		On Greek war ship at port of Athens.
Steamship Ransholm	Aug. 5	3		At Gefle, Sweden, from Rufisque, Senegal.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-June 10			Cases, 333.
Algiers	May 11-June 30	8		
Oran	May 21-July 10	32		
Brazil:				
Rio de Janeiro	May 22-June 25	5	5	
British East Africa:				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 29-May 7		22	
Zanzibar	Apr. 1-30	7	2	
British South Africa:				
Northern Rhodesia	Apr. 30-June 24	58		Native.
Canada	June 5-July 23			Cases, 258.
Alberta	June 12-July 23			Cases, 69.
Calgary	June 12-25	5		
British Columbia—				
Vancouver	May 23-29	2		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to August 19, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Canada—Continued.				
Manitoba	June 5-July 16			Cases, 14.
Winnipeg	June 12-Aug. 6	13		
Ontario	June 5-July 23			Cases, 137.
Ottawa	June 12-July 30	64		
Toronto	June 19-July 23	9		
Quebec	do	13		
Saskatchewan	June 12-July 23			Cases, 32.
Regina	July 17-30	2		
Ceylon	May 1-7			Cases, 3; deaths, 1.
China:				
Amoy	May 8-28	1		
Chefoo	May 8-14			Present.
Foochow	May 8-June 11			Do.
Hong Kong	May 8-July 2	16	15	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-July 9	7		
Dairen	May 2-June 12	7	5	
Fushun	May 15-June 5	9		
Harbin	June 13-26	2		
Kai-Yuan	July 3-9	2		
Mukden	May 22-July 9	5		
Penshu	July 3-9	1		
Ssupingkai	May 8-July 9	3		
Tientsin	May 8-28	11		
Chosen	Feb 1-Apr 30			Cases, 354; deaths, 84.
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr. 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr. 1-30	1		
Curacao	May 29-June 4	1		Alastrim.
Egypt	May 7-June 17			Cases, 17; deaths, 3.
Alexandria	May 21-June 17	4	1	
Cairo	Jan. 22-Feb. 11	4		
France	Apr. 1-May 31			Cases, 128.
Paris	May 21-June 30	11	2	
Gold Coast	Mar. 1-Apr. 30	22	4	
Great Britain:				
England and Wales	May 22-July 16			Cases, 1,810.
Bradford	May 29-June 11	2		
Cardiff	June 19-July 2	4		
Liverpool	do	1		
London	May 15-June 18	2		
Newcastle on Tyne	June 12-July 2	2		
Sheffield	June 12-July 9	18		
Scotland—				
Dundee	May 29-July 2	5		
Guatemala:				
Guatemala City	June 1-30		9	
Guinea (French)	June 4-10	9		
India	Apr. 17-June 11			Cases, 44,336; deaths, 11,199.
Bombay	May 28-June 25	136	92	
Calcutta	May 8-June 18	270	206	
Karachi	May 15-June 25	8	5	
Madras	May 22-July 2	14	5	
Rangoon	May 8-June 18	125	38	
India, French Settlements in	Mar. 20-May 21	145	88	
Indo-China (French)	Mar. 21-June 10			Cases, 236.
Saigon	May 14-20	1	1	
Iraq:				
Baghdad	Apr. 10-16	2		
Basra	do	1		
Italy	Apr. 10-May 21	13		
Jamaica	May 29-June 25	9		Reported as alastrim.
Japan	Apr. 3-May 7			Cases, 19.
Nagasaki City	June 20-July 10	21	5	
Taiwan Island	May 21-31	1		
Java:				
Batavia	May 22-28	1		
East Java and Madura	Apr. 24-30	1		
Latvia	Apr. 1-30	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to August 19, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Mexico:				
Durango	June 1-30		1	
La Oroya	Apr. 1-June 30			Present.
San Luis Potosi	May 29-July 16		7	
Tampico	June 1-10	1	1	
Morocco	Apr. 1-May 31	94		
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in two localities.
Pasir Residency	Apr. 30-May 6			Epidemic outbreak.
Samarinda Residency	May 21-27			Do.
Nigeria	Mar. 1-Apr 30	1,560	351	
Persia:				
Teheran	Feb. 21-Apr. 20		5	
Poland	Apr. 19-May 28	7		
Portugal:				
Lisbon	May 29-July 9	12	1	
Senegal:				
Medina	July 4-10	7		
Siam	May 1-June 18			Cases, 41; deaths, 11.
Bangkok	May 15-June 18	5	3	
Spain:				
Valencia	May 29-June 4	2		
Straits Settlements	June 12-18			Cases, 3.
Singapore	Apr. 1-May 28	4	2	
Sumatra:				
Medan	June 5-11	2		
Switzerland:				
Berne	June 26-July 2	1		
Tunisia	Apr 1-June 10			Cases, 10.
Tunis	June 1-10	1		
Union of South Africa:				
Cape Province—				
Elliott District	May 11-June 10			Outbreaks.
Kalanga District	do			Do
Transvaal—				
Barberton District	May 1-7			Do.

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-June 10			Cases, 263; deaths, 29.
Algiers	May 11-June 30	24		
Oran	May 21-June 30	30		
Bulgaria	Mar 1-May 10			Cases, 151; deaths, 14.
Sofia	June 4-10	1		
Chile				
Concepcion	May 29-June 4		1	
Ligua	Mar 16-31	2		
Talcahuano	July 10-16		1	
Valparaiso	do	2		
China:				
Manchuria—				
Mukden	May 29-June 4	1		
Chosen	Feb. 1-Apr. 30			Cases, 330; deaths, 30.
Chemulpo	May 1-31	4		
Gensan	do	1		
Seoul	Apr. 1-May 31	9		
Czechoslovakia				Apr. 1-30, 1927: Cases, 21.
Egypt	May 28-June 17			Cases, 79, deaths, 16.
Alexandria	May 21-July 15	10	3	
Cairo	Jan. 15-21	1		
Estonia	Apr 1-30			Case, 1.
Greece:				
Athens	June 1-30		9	
Iraq:				
Baghdad	Apr. 24-30	1		
Irish Free State:				
Cork County	July 3-9	1		In urban district.
Latvia	Apr 1-May 31	17		
Lithuania	Feb. 1-Apr. 30	121	17	
Mexico	Feb. 1-28			Deaths, 26.
Mexico City	May 29-July 16	15		Including municipalities in Federal District.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to August 19, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Morocco	Apr. 1-June 10	528		
Palestine	May 24-June 6			Cases, 3
Haifa	do	2		
Mahnaim	May 17-23	1		In Safad district.
Safad	May 17-June 20	3		
Peru:				
Arequipa	Apr. 1-30		1	
Poland	Apr. 10-June 4	822	80	
Portugal:				
Lisbon	May 29-June 4	1		
Rumania	Apr. 3-May 14	687	47	
Tunisia	Apr. 22-June 10			Cases, 137.
Tunis	July 5-11			
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa	Apr. 1-30			Cases, 55, deaths, 8, native. In Europeans, cases, 2.
Cape Province	Apr. 1-June 18	42	5	
Albany District	June 5-11			Outbreaks.
East London	May 22-28	1		Do.
Glen Grey District	May 1-7			
Qumbu District	do			Do.
Natal	Apr. 1-June 18	7	3	
Impendhle District	June 5-11			Do.
Orange Free State	Apr. 1-May 28	5		
Transvaal	Apr. 1-30	1		
Yugoslavia	May 1-31			Cases, 4

YELLOW FEVER

Dahomey (West Africa):				
Porto Novo	July 1	1	1	In Syrian woman.
Gold Coast	Apr. 1-30	8	5	
Liberia:				
Monrovia	May 29-July 8	4	5	
Senegal	May 27			Cases, 3.
Dakar	July 9	1		
M'Bour	May 27-June 19	5	5	
Ouakam	June 2-8	1	1	
Thies	July 10	1	1	In European.
Tivaouane	May 27-June 8	5	5	

TREASURY DEPARTMENT

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SPECIAL ARTICLES

The Cause, Symptoms, and Prevention of Pellagra

Sewage Pollution at Southern End of Lake Michigan

UNITED STATES
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1927

UNITED STATES PUBLIC HEALTH SERVICE

HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

Asst. Surg. Gen. C. C. PIERCE, *Chief of Division*

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PUBLIC HEALTH REPORTS

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PELLAGRA

ITS NATURE AND PREVENTION[1]

By JOSEPH GOLDBERGER, *Surgeon, United States Public Health Service*

In the following pages an attempt is made to answer as simply as possible some of the more important questions which the general public frequently asks in regard to pellagra.

SYMPTOMS

Although the fully developed disease makes a picture which, when once seen, can hardly ever fail to be recognized even by one who is not a physician, the diagnosis of the disease is by no means always easy, because the fully developed cases form only a small proportion of the total. Difficulties may arise also in that other conditions at times present signs or symptoms which the untrained and inexperienced may mistake for those of pellagra.

The following sketch of the symptoms is presented, therefore, not with the idea that it will enable the untrained to recognize the disease, but rather to call attention to those symptoms or combinations of symptoms which should be looked upon as suspicious and as calling for the simple and effective measures of prevention to be outlined.

In a fairly well developed though not advanced case the disease shows itself by a variety of symptoms, of which an eruption, weakness, nervousness, and indigestion form the most distinctive combination.

Eruption.—The eruption is the most characteristic telltale of the disease and the main reliance in its recognition. When the eruption first shows itself it may look very much like, and frequently is mistaken for, a sunburn. The sunburned appearance soon changes and in many cases the reddened skin turns to a somewhat dirty brown and frequently acquires a parchmentlike appearance, then quickly becomes rough and scaly, or cracks and peels. In some instances, however, the beginning redness is not noticed or perhaps does not

[1] This, in part, is a revision of Reprint No. 461 from the Public Health Reports.

occur, the first and possibly the only thing observed being the dirty-looking scaly patch of skin appearing very much like and frequently thought to be no more than a simple weathering or chapping.

Among the most distinctive peculiarities of the eruption is its preference for certain parts of the body surface. The backs of the hands, forearms, and the backs of the feet are its favorite sites. Other parts not infrequently attacked are the sides or front of the neck or both, the face, arms, elbows, legs, and knees. Another marked peculiarity of the eruption is its tendency to appear at about the same time and to cover similar areas, both as to extent and peculiarities of outline, on both sides of the body. Thus it may be stated as the rule that if the back of one hand or of one foot, one elbow, one knee, one side of the neck, one cheek, or the lid of one eye is affected, then the corresponding part on the other side of the body is, or soon becomes, similarly affected, and affected to almost exactly the same extent. This rule, however, is not without many exceptions. It must not be hastily assumed, therefore, that the possibility of pellagra is necessarily excluded because the back of one hand or of one foot or of one side of the neck alone seems to be involved, or is involved to so slight an extent as to be almost nothing in comparison with the involvement of the other side.

Suspicious symptoms.—Although the main reliance in the recognition of the disease, the eruption of pellagra not infrequently is very tardy in making its appearance. While it is ordinarily impossible to determine the presence or absence of the disease with certainty until the eruption appears, a shrewd suspicion may, nevertheless, be formed from a careful consideration of the other symptoms. This applies only to a limited extent to children, in most of whom the manifestations of the disease, other than the eruption, are slight and frequently difficult or impossible to make out. Notwithstanding this, however, careful questioning of the mother, if she be observant, not infrequently develops the fact that the child seems to her less active than common; in some cases it is evidently listless or fretful, and the mother may also recognize that it has fallen off in weight. In older individuals a complaint of loss of strength with indigestion or nervousness, or both, coming on or made worse in the late winter or spring and improving in the fall, are very frequently met with. The patient may complain of being "worked out" or of having "blind staggers" (dizziness, vertigo), of discomfort or pain in the pit of the stomach, frequently of headache, sometimes of wakefulness, frequently also of sluggishness of the bowels requiring, possibly, the habitual use of medicine to move them. Although, as has already been said, these symptoms alone or even with the addition of such symptoms as a burning or scalded feeling of the mouth, reddened tongue, burning of the hands or feet, and loose bowels, are not enough

to distinguish pellagra from other conditions, they are ample to justify a suspicion of the disease, especially if such individual is known to be finicky or a nibbler about food, or has been living on a diet made up largely of biscuits, corn bread, grits, gravy, and sirup, with little or no milk or lean meat and but a small amount of vegetables and fruit.

The suspicion of pellagra may with confidence be dismissed in one who is known to be, and to have been, a habitual milk drinker and meat eater. It is well to be warned, however, that it is very easy to be misled about what and, particularly, as to how much the individual actually eats. The question of quantity is of the utmost importance. It isn't enough merely to nibble; one must consume a substantial quantity of these or other preventive foods to supply fully the body's needs.

Insanity.—In a small proportion of cases, fortunately much smaller than is commonly believed, the mind is affected to a degree requiring asylum care. Many of these cases get well under treatment. Recovery of the mind is not to be expected, however, when, as frequently happens, the pellagra occurs in a person whose mental disturbance is due to some other (incurable) cause.

IMPORTANCE AND DISTRIBUTION

Under proper treatment and with careful nursing, only a small percentage of cases die; nevertheless, the actual number of deaths is deplorably large. As deplorable, if not even more so, is the great amount of sickness and debility, much of it vague and ill-defined and thus frequently unrecognized, which pellagra must be charged with causing. It is probable that in each year for every death attributed to the disease there are fully 20 persons with clearly recognizable attacks and probably as many more with debility from the same cause but not definitely marked as such.

In the United States the disease occurs most frequently in the area south of the Potomac and Ohio Rivers. Indeed, in many of the Southern States pellagra still is one of the foremost causes of death. In other parts of the country the disease is very much less common. This difference is due mainly to the different dietary habits of the people in the northern and western part of the country and to the better conditions of food supply.

RELATION TO LIVING COST

The disease may occur anywhere and in anyone, but it is the poor man who is the chief sufferer from it. This explains why hard times, especially when accompanied by rising food prices, are likely to be followed by an increase in the disease. This is well illustrated by

the great increase that took place in 1915 following the hard times brought on by the outbreak of the war in Europe in the summer of 1914, and by the great decrease in 1916 following the improvement in conditions that developed during 1915. Unfortunately, the upward trend of living cost in the fall and winter of 1916 brought about an increase of pellagra in 1917 in many localities. Similarly, the postwar deflation of 1920 was followed by an increase of pellagra in many localities in 1921.

CAUSE

Pellagra not "catching."—Experimental tests and careful observations show that pellagra is not a communicable disease. No germ that can properly be considered its cause has ever been found. Attempts to give persons pellagra by inoculations of blood or saliva and of other body discharges from severe cases of pellagra have failed completely. On the other hand, when 11 convicts were fed on an unbalanced diet composed mainly of biscuit, corn bread, grits, rice, gravy, and sirup, with only a moderate amount of vegetables and no milk, meat, or fruit, at least six developed the disease. Furthermore, it was observed that in an asylum where many of the inmates developed pellagra year after year the nurses and helpers who lived with them never developed the disease. The only discoverable reason for the exemption of the nurses and helpers was a better diet. The nurses and helpers had a liberal allowance of lean meat and some milk, while the inmates had very little or none. When this observation was tested by giving the inmates a better diet—that is, by giving them more meat, milk, fruit, and vegetables—it was found that they stopped having pellagra. This test was also carried out at three orphanages where there had been many cases in the children every spring for several years, and always with the same result. After the diet was improved, although no other change was made, pellagra disappeared. Attempts to prevent pellagra by other means have succeeded only when a change in diet (whether intentional or not) was also made.

Unbalanced diet.—The foregoing facts, together with others which can not be here set forth, show that pellagra is caused by subsisting on a special kind of faulty or unbalanced diet, and that people who consume a mixed, well-balanced, and varied diet—such, for example, as that furnished to our soldiers and sailors—do not have the disease. Stated more specifically, it may be said that pellagra results from a deficiency in the diet of a pellagra-preventing dietary essential or vitamin, which has been named vitamin P–P. This deficiency arises when the diet does not include *enough* of the foods which carry the vitamin P–P to supply the needs of the body for this food factor. This does not mean that the diet that leads to pellagra is entirely devoid of this essential vitamin. On the contrary, it is probable that what may be called a pellagra-producing diet always contains

some but not *enough* for the nutritive needs of some or all of those living on it.

The main, or basic, portion of the diet of the rural population of the South is made up of the following foods: Cornmeal, hominy grits, white wheat flour, white rice, dried beans, "white meat" (salt pork), sorghum or cane molasses, and collards, or "greens." Because of the three principal components, namely, meal, "meat," and molasses, to which this diet in hard times tends to be restricted, it is designated in common parlance as the "Three M's." This basic diet, when made up in conventional proportions, is pellagra producing. It contains some vitamin P–P derived from the cornmeal, dried beans, and collards, but ordinarily this is much too little to prevent pellagra. A sufficient increase in the beans and collards, or, much better, the addition of some other food or foods containing this vitamin, would tend to diminish or altogether prevent the occurrence of the disease.

When the disease develops it may be taken as a certain indication that for some reason there has not been included in the diet *enough* of the foods containing vitamin P–P. This reason may be any one or some combination of the following:

1. Individual peculiarity or eccentricity of taste, particularly under circumstances affording but little variety of P–P rich foods from which to choose. This may be exemplified by some of those (including certain types of insane) who may have a dislike for milk, for eggs, for fowl, etc. In this connection may be mentioned also the improper dieting that may accompany a prolonged alcoholic debauch.

2. A short available supply of the P–P rich foods, resulting from (*a*) inaccessibility to market, (*b*) difficulties of transportation, particularly of the perishable foods, (*c*) an epizootic among some of the domestic animals (milch cows, poultry, swine), (*d*) fencing laws which may make it impracticable for many to keep milch cows, or (*e*) destructive storms or overflows which may lead directly or indirectly to a reduction in the number of domestic animals (milch cows, goats, poultry, or swine) and to a shortage of fresh vegetables from the loss of gardens, etc.

3. Insufficient cash or credit available for the purchase of such food, resulting from unemployment, insufficient income from crops, extravagance with respect to expenditures for purposes (amusements, automobiles) other than for food, shiftlessness.

PREVENTION AND TREATMENT

The pellagra-preventing vitamin is believed to be present in nearly, if not quite, all natural foods except the oils and fats, but in very greatly varying amounts. Thus there is very little in corn meal, white flour, or rice; somewhat more in wheat middlings, and a great

deal in lean meat and powdered yeast. Unfortunately, it is not yet known just how much each food contains nor how much the body must have for the maintenance of health. In considering prevention and treatment it is, therefore, necessary to proceed on general principles, guided by such knowledge of relative values as we already have.

Milk.—Although not rich in the pellagra-preventing vitamin, milk, whether as sweet milk or buttermilk, is one of the most valuable single foods for the prevention and cure of pellagra. But when lean meat, powdered yeast, vegetables, and fruits are not included in the diet or only infrequently, or in small amounts, it must be taken in liberal quantities—at least three or four glassfuls (about 2 pints) daily—in order to insure an adequate preventive effect.

Ownership of a good milch cow is a valuable means of insuring an adequate supply of milk for the family and thus of preventing pellagra, and should be encouraged to the utmost.

Lean meat (beef, mutton, pork, fish, fowl, etc.).—Lean beef has been found to be quite rich in the pellagra-preventing vitamin. The same is very probably true of such other lean animal flesh foods as those of mutton, pork (ham, shoulder, liver, kidneys), fresh or canned fish (as, for example, salmon), and poultry. For pellagra-preventive purposes, when it is the main reliance, an adult will need nearly half a pound of a lean meat a day.

Powdered yeast.—Dried pure yeast is the richest "P-P" containing food at present known. It is also very rich in protein and in the beriberi-preventing vitamin, so that it should rate high as a food. This yeast is a microscopic plant cell used in baking and brewing. For use as a food the yeast plant should preferably be dead. In the home it may readily be killed by stirring the dry powder into some water and then boiling for about one minute. In the adult, 1 ounce a day (or two teaspoonfuls three times a day) of the pure powdered yeast will of itself suffice to prevent pellagra. It may be taken in any way that is most convenient as, for example, in water, in milk, in tomato juice, in sirup or molasses, etc.

The valuable dietary properties of powdered yeast suggest the importance of its consideration for general inclusion in the dietary.

Eggs.—There is reason to believe that eggs contain the pellagra-preventing vitamin which is probably present exclusively in the yolk. As a preventive food, eggs are probably inferior to lean meat.

Vegetables and fruits.—There is reason to believe that all vegetables—potatoes, turnips, string beans, tomatoes, cabbage, collards, turnip greens, spinach—and the fruits contain the pellagra-preventing vitamin, but, probably like milk, in small amounts. Thus, it probably requires nearly 2 pounds of tomatoes (about 1 quart of canned tomato juice) to produce about the same preventive effect

as a quart of buttermilk or as about half a pound of lean meat, or as 1 ounce of powdered yeast. Notwithstanding this, however, the vegetables are valuable foods for balancing the diet, but must be eaten in liberal amounts.

The cultivation of more and better gardens in the area of pellagra endemicity would be very helpful in the prevention and eradication of pellagra and should be encouraged in all possible ways.

The foods that have preventive action have, of course, also curative value; but in the face of an actual or impending attack of pellagra, it is manifestly advantageous to begin the treatment with foods that are rich in the P-P vitamin and that at the same time are within the digestive capacity of the patient. With these considerations in mind, powdered yeast, milk (sweet or buttermilk), lean meat (fresh meat juice, scraped beef), egg yolk, tomato juice (fresh or canned tomatoes) should be given preference.

The foods of first choice, in suitable quantities, should be given at regular intervals just as is done with medicine. Indeed, for the prevention and cure of pellagra the only medicine we have is food. There is no drug known that actually serves any useful purpose in this disease unless it is to mitigate or relieve painful or disturbing symptoms.

Care must be taken to see that the food prescribed is actually eaten. It is to be borne in mind that some individuals must be educated or reeducated to proper food habits. Unsatisfactory results from treatment are frequently attributable to a failure to bear this in mind and to take precautions accordingly.

Of the powdered yeast, 1 ounce a day will ordinarily be enough for an adult, or half of this for a child under 12 years of age. More may be given in cases of exceptional gravity. It may be advantageously administered (one or two teaspoonfuls three to six times a day) in milk, tomato juice, fruit juice, or sirup. Where yeast happens not to be available, and in cases where solid food can not for any reason be taken, milk and tomato juice may be depended on. The juice pressed from fresh beef, or raw egg yolk, or both, may, and if practicable should, be given in addition to the milk and the tomato juice. A bean or pea soup (purée), with or without milk or meat juice, may be used as a palatable and valuable addition to the liquid diet.

As the ability to take solid food returns, scraped or finely minced beef or other lean meat may be included in the feeding. The diet should be increased as rapidly as the digestive ability of the patient permits. In the average case the patient, if carefully fed, will be fully convalescent in from six to twelve weeks.

RECURRENCE

Recovery from an attack does not mean, however, that thereafter the disease will not recur. It may or will return if one's diet again becomes faulty in the special way above described. To avoid having a return of the disease there is one and only one known way, and that is by a proper diet at all times and at all seasons. In order to assure this for those in the area of pellagra endemicity, every effort must be made by the individual and by persons in positions of influence to improve available food supplies by the promotion of diversified farming, the ownership of good milch cows, and the cultivation of more and better gardens.

REPORT OF AN INVESTIGATION OF THE POLLUTION OF LAKE MICHIGAN IN THE VICINITY OF SOUTH CHICAGO AND INDIANA HARBORS

In the summer of 1924 the official heads of the Sanitary District of Chicago, the Chicago City Health Department, and the State departments of health of Indiana and Illinois, jointly requested the Surgeon General of the Public Health Service to cooperate with them in a study of the sewage pollution of Lake Michigan in the area adjacent to the Calumet district, lying along the southern end of the lake, partly in Illinois and partly in Indiana. As the result of this request, the investigation was undertaken, with the cooperation of the four bodies named, along the following lines:

1. A sanitary survey of the drainage area of the Calumet Rivers.
2. A bacteriological study of the waters of Lake Michigan in this region and of the public water supplies taken from it.
3. The collection and analysis of available data relative to the influence of existing pollution of these water supplies on the public health.

This general plan of study was carried out under the general direction of two officers of the Public Health Service, a sanitary engineer and a bacteriologist, the latter in charge of a special laboratory established for the study, and with the joint participation of the laboratories of the Sanitary District of Chicago and the Chicago City Health Department. Laboratory methods among the three cooperating laboratories were carefully standardized so as to give mutually comparable results.

The so-called Calumet district of Illinois and Indiana is the area drained by the Little Calumet and Grand Calumet Rivers and by the Calumet River which is formed by their confluence. Within this area lie the southeastern part of the city of Chicago, several other Illinois municipalities adjacent to Chicago, and, on the Indiana side, likewise adjacent to Chicago, the cities of Hammond, Whiting, East

Chicago, and Gary. The district is essentially industrial, especially identified with the steel industry, which has been developed to great proportions within the last 20 years with consequent great increase in population, which now approximates 250,000 to 300,000.

Under natural conditions the Calumet River discharges into Lake Michigan, but under the conditions prevailing at the time of the study the natural drainage was modified by the diversion of part of the flow through the Calumet-Sag artificial channel connecting the Little Calumet River with the Chicago Main Drainage Canal. Under ordinary conditions, owing to the flat topography, the flow of the upper Calumet River is generally away from the lake, but under other conditions, usually coincident with flood flows or a lowered lake level, the current is reversed into the lake, the outward movement being increased by offshore winds or by unusual lowering of the lake level. Wastes discharged into the Calumet near its mouth reach the lake to some extent under ordinary conditions; and wastes discharged into the upper Grand Calumet or into the Indiana Harbor Ship Canal constantly reach the lake through the canal.

From a sanitary survey of the Calumet district it is estimated that in 1925 the sewered population draining into the Calumet Rivers or into the lake in this district was about 261,400, of which 78,500 were located in Illinois and 182,900 in Indiana. Of the 123 industrial plants located in the district, 109 were discharging wastes of no importance as contributing to pollution. Of the remaining 14 plants, 7 coke and oil refinery plants discharge wastes causing tastes and odors in water supplies contaminated by them.

As would be expected, the foregoing conditions have resulted in the gross pollution of Lake Michigan in the immediate vicinity of the Calumet district shore, with the zone of pollution extending some distance into the lake. Laboratory data, collected during the period October, 1924, to November, 1925, from samples of lake water collected regularly at 70-odd stations distributed over a lake area of about 90 square miles, have shown that an area of constant gross pollution extends nearly a mile into the lake from the mouth of the Calumet River to the vicinity of the Indiana Harbor Ship Canal. Under favorable conditions of wind this zone of gross pollution is extended east as far as the Gary Light and north beyond the line of the Sixty-eighth Street and Dunne cribs. Evidence of occasional slight sewage pollution was found as far out as 10 miles east of Jackson Park, Chicago. Water of bacteriological quality conforming to the United States Treasury Department standards for drinking water was found consistently only at a distance of about 4 miles east of the Dunne and Sixty-eighth Street cribs and nearly 7.5 miles northeast from the Indiana Harbor Ship Canal. The intensity of

pollution in the lake at any given point, except the outer margin of the area studied, was found to vary enormously from month to month and even from day to day, due apparently to changes in the direction and velocity of winds. Observations made in a zone about 5 miles wide, extending from Sixty-eighth Street, Chicago, to Evanston, Ill., showed much less pollution than was found opposite the Calumet district.

Bacteriological tests indicated that the raw water supplies received at the intakes of Evanston, Chicago, and Gary are suitable for use after appropriate artificial purification. The waters received at the intakes of Waukegan, Lake Forest, Hammond, Whiting, and East Chicago, however, showed such high bacterial content as to impose what is considered an excessive load on a modern water purification plant providing for filtration and chlorination. The treated water supplies of Evanston and Chicago were found to be of consistently good bacterial quality, but those of Waukegan, Lake Forest, Hammond, Whiting, East Chicago, and Gary failed to conform to high standards of quality, due in part to inadequacy of the treatment used.

From the studies it is concluded:

1. That the pollution of Lake Michigan by sewage and industrial wastes discharged from the Calumet district, especially from the Indiana portion, is such as to render the sources of water supply of Hammond, Whiting, and East Chicago unfit for that purpose, even with efficient purification.

2. That the source of water supply of Gary, though located outside the zone of grossest pollution, is seriously contaminated, but not beyond the capacity of modern water purification.

3. That the sources of water supply of Chicago at the Dunne and Sixty-eighth Street cribs are affected and at times endangered by sewage pollution from the Calumet district.

4. That the existing water intakes in the lake, north of the Dunne and Sixty-eighth Street cribs, appear to be beyond the zone of pollution from the Calumet district and are receiving water of such quality that it can be satisfactorily purified by artificial processes, excepting the supplies of Waukegan and Lake Forest.

5. That if the use of the lake as a source of water supply for the southern portion of Chicago and for the Calumet district is to be continued, it is necessary, in the interest of public health, that the water supply intakes in this locality be protected, primarily through the abatement of existing pollution reaching the lake through the Calumet River and Indiana Harbor Ship Canal.

The report of this investigation has been published as Public Health Bulletin No. 170, which may be purchased through the Superintendent of Documents, Washington, D. C., at 25 cents per copy.

DEATH RATES IN A GROUP OF INSURED PERSONS

RATES[1] FOR PRINCIPAL CAUSES FOR JUNE, 1927, AND COMPARISON BY WHITE AND COLORED FOR THE FIRST SIX MONTHS OF 1925, 1926, AND 1927

The accompanying tables are taken from the Statistical Bulletin for July, 1927, published by the Metropolitan Life Insurance Co. They present the mortality experience of the industrial department of the company for June, 1927, as compared with May, 1927, and with June, 1926, and compare the rates for white and colored policy-holders for the first six months of the years 1925, 1926, and 1927. The rates for 1926 and 1927 are based on a strength of approximately 18,000,000 insured persons in the United States and Canada.

The death rate for June for this group of persons was 9.3 per 1,000, as compared with 8.7 for May and 9.6 for June, 1926. A lower death rate has been recorded each month of the first half year of 1927 than for the corresponding month last year.

The most pronounced declines, as compared with June of last year, were for measles, 62.5 per cent; whooping cough, 34.3 per cent; influenza, 43.9 per cent; tuberculosis, 10.9 per cent; and pneumonia, 17.7 per cent. On the other hand, typhoid fever showed an increase of nearly 100 per cent, which, it was stated, is due almost entirely to the Montreal epidemic, and the diphtheria rate was 10.4 per 100,000, as compared with 9.1 for June last year. In each month of the current year diphtheria has registered a higher death rate than in the corresponding month of 1926.

Suicides were more numerous than they were in June of last year; and five of the first six months of the present year have shown this unfavorable comparison. All accidents combined and automobile fatalities also registered higher death rates in June, 1927, than in June a year ago.

[1] It should be borne in mind that the death rates in the group of persons here considered are uniformly lower than the rates for the general population, varying between 82 and 87 per cent of the rate for the registration area from 1911 to 1919, inclusive, and from 72 to 75 per cent in the years 1920 to 1925, inclusive. In 1924 and 1925 the rates for the insured group were 72 per cent of the rates for the registration area.

Death rates (annual basis) for principal causes per 100,000 lives exposed, May and June, 1927, and June and year, 1926

[Industrial department, Metropolitan Life Insurance Co.]

Causes of death	Rate per 100,000 lives exposed [1]			
	June, 1927	May, 1927	June, 1926	Year 1926 [2]
Total, all causes	923.2	874.8	964.3	942.7
Typhoid fever	6.1	5.2	3.1	4.2
Measles	5.7	7.5	15.2	10.2
Scarlet fever	3.5	3.5	4.9	3.4
Whooping cough	6.9	6.5	10.5	9.6
Diphtheria	10.4	10.6	9.1	9.7
Influenza	12.0	18.7	21.4	31.0
Tuberculosis (all forms)	99.8	96.4	112.0	98.7
Tuberculosis of respiratory system	80.9	81.5	99.2	86.5
Cancer	74.0	68.4	75.2	73.5
Diabetes mellitus	16.9	16.0	15.7	16.7
Cerebral hemorrhage	57.5	49.3	54.9	55.5
Organic diseases of the heart	138.7	130.8	137.8	133.9
Pneumonia (all forms)	69.7	84.3	84.7	97.9
Other respiratory diseases	16.7	16.3	13.3	13.1
Diarrhea and enteritis	22.0	17.7	24.0	29.8
Bright's disease (chronic nephritis)	75.5	70.1	75.0	73.3
Puerperal state	16.3	14.7	16.5	15.3
Suicides	8.6	7.6	8.0	7.6
Homicides	7.6	7.6	7.7	7.0
Other external causes (excluding suicides and homicides)	69.0	53.6	66.7	62.2
Traumatism by automobiles	19.5	13.0	19.0	16.7
All other causes	206.3	189.8	208.8	190.4

[1] All figures include infants insured under 1 year of age.
[2] Based on provisional estimate of lives exposed to risk in 1923.

FIRST SIX MONTHS OF 1925, 1926, AND 1927

The health conditions among this group of industrial policyholders for the first six months of 1927, as revealed by the mortality records, were better than those for any other corresponding six-month period in the history of the company. The death rate for the half year among the white policyholders was 8.6 per 1,000, as compared with 9.7 in 1926, and 8.9 in 1925. The nearest approach to the 1927 rate was 8.7 per 1,000 in the first half of 1921; but the improvement in 1927 over this previous minimum is greater than is apparent from a comparison of the crude rates, since in 1921 no insurance was placed on infants by the company, whereas in 1927 a mean of about 492,000 infant lives were insured.

The death rate for colored persons in this group was 15.4 per 1,000, which also shows a pronounced reduction from the rates for the first half of 1926 (16.5 per 100,000) and of 1925 (16.1 per 100,000). Lower rates were recorded for the colored, however, in both 1921 and 1922.

Three of the four principal epidemic diseases of childhood—measles, scarlet fever, and whooping cough—show reduced rates as compared with 1926; whereas diphtheria registered a considerable increase among the white and a small rise among the colored policyholders. With regard to this increase in diphtheria the Bulletin states:

There has been a disposition on the part of those opposed to toxin-antitoxin immunization to make capital out of the rise in the diphtheria death rate so far

this year in the face of the increased number of persons immunized. The unfavorable situation so far this year is probably only a temporary phase in a situation that has been marked by continuous improvement for six years. Coincident with the increasing use of toxin-antitoxin since 1921, the diphtheria death rate among children insured in the Metropolitan declined from 23.8 per 100,000 in 1921, to 9.5 in 1926, a reduction of 60.1 per cent. Public health workers have become so accustomed to seeing the diphtheria death rate decline, without any interruption, that * * * the small increase observed this year caused some anxiety among those public health workers who have been most active in conducting an earnest campaign for the immunization of children against this disease. It must be remembered that the 1927 diphtheria rate, to date, is lower than it has ever been before, at this time of the year, with the single exception of 1926. The slight increase will serve as an incentive to the public health authorities to concentrate their campaign for immunization in those communities where the mortality shows that redoubled efforts are most needed.

The increase in typhoid fever during the first half of the year is attributed almost entirely to the Montreal outbreak.

The outstanding feature of the 1927 health record so far is the further reduction in tuberculosis mortality. As the season for the highest death rate for this cause has now passed, it is predicted that the year will register a considerable decline and a new low figure for this disease.

Improvement in the death rate for influenza and the respiratory diseases was accompanied by lower mortality from "degenerative" conditions, accounting, in part, at least, for the notable reduction in the death rates for cerebral hemorrhage, organic heart disease, and chronic nephritis during the first half of 1927.

The death rate for cancer shows a small increase among the white policyholders and a larger increase among the colored.

The mortality from automobile accidents, which has been increasing for more than a score of years, again shows a rise. The death rate for this cause among the white persons was 15.1 per 100,000 for the first six months of 1927, as compared with 14.5 in 1926 and 13.6 in 1925. During the first half of 1927 about one-fourth of all lives lost in accidents in the group of persons here reported on were the result of automobile accidents. It is pointed out that the only encouraging item in the situation is that in individual communities success has attended the efforts directed toward prevention by means of restrictive traffic regulations.

Death rates (annual basis) for principal causes per 100,000 persons exposed for first six months of 1925, 1926, and 1927—Comparison of rates for white and colored policyholders

[Industrial department, Metropolitan Life Insurance Co.]

Cause of death	Death rates per 100,000 persons exposed					
	White			Colored		
	January-June, 1927	January-June, 1926	January-June, 1925	January-June, 1927	January-June, 1926	January-June, 1925
All causes of death	856.8	966.7	894.2	1,540.4	1,654.6	1,612.9
Typhoid fever	4.2	2.5	2.3	6.5	4.5	6.3
Measles	7.1	18.0	4.4	3.6	13.0	3.2
Scarlet fever	4.4	5.0	5.4	1.4	1.5	1.2
Whooping cough	6.9	11.1	7.1	9.4	13.6	13.7
Diphtheria	11.8	10.1	12.7	6.7	6.2	5.3
Influenza	21.6	45.9	29.0	52.4	91.5	71.4
Meningococcus meningitis	1.3	.9	1.0	1.8	.6	.7
Tuberculosis (all forms)	80.4	88.1	88.9	237.6	240.8	239.2
Tuberculosis of respiratory system	70.3	77.5	77.9	208.3	210.8	208.3
Tuberculosis of meninges, etc	5.0	5.1	5.4	7.4	7.7	9.1
Other forms of tuberculosis	5.1	5.5	5.6	21.8	22.3	21.7
Cancer	74.5	74.3	70.7	71.8	67.0	72.8
Diabetes	17.3	18.2	16.9	19.4	16.3	15.9
Alcoholism	3.1	3.4	2.8	5.0	4.8	4.2
Cerebral hemorrhage, apoplexy	51.5	55.3	53.3	97.7	101.1	91.0
Organic diseases of the heart	130.0	142.3	128.1	217.4	219.5	232.1
Total respiratory diseases	102.7	140.6	118.0	209.8	276.3	239.0
Bronchitis	4.6	5.9	6.1	8.1	10.7	9.8
Bronchopneumonia	39.2	58.2	44.5	68.0	97.0	74.8
Pneumonia (lobar and undefined)	50.9	68.2	58.9	121.9	155.6	139.3
Other diseases of respiratory system	8.0	8.3	8.4	11.7	13.0	15.0
Diarrhea and enteritis	16.5	18.0	19.8	19.6	20.1	27.1
Under 2 years	13.3	15.2	16.7	13.3	14.9	19.5
2 years and over	3.2	2.8	3.1	6.3	5.2	7.6
Acute nephritis	4.0	4.6	5.0	15.3	16.9	16.0
Chronic nephritis	66.0	72.2	67.6	129.6	137.0	131.9
Total puerperal state	14.5	15.8	17.0	25.5	24.5	25.5
Puerperal septicemia	5.9	6.0	6.5	13.4	11.4	11.6
Puerperal albuminuria and convulsions	2.8	3.5	3.8	4.6	5.9	5.6
Other diseases of puerperal state	5.9	6.3	6.8	7.5	7.2	8.3
Total external causes	68.2	66.5	70.8	115.5	110.4	109.9
Suicides	8.5	7.8	7.2	7.0	5.7	4.3
Homicides	3.1	3.1	3.5	36.6	33.1	33.0
Accidental and unspecified violence	56.6	55.6	60.1	71.9	71.6	72.6
Accidental drowning	4.5	4.1	4.6	6.5	3.4	5.2
Automobile accidents	15.1	14.5	13.6	14.7	13.1	11.3
All other and ill-defined causes of death	170.7	173.8	173.1	294.7	288.9	306.5

PUBLIC HEALTH ENGINEERING ABSTRACTS

Experimental Work on Dengue. Anon. *Indian Medical Gazette*, vol. 61, No. 12, December, 1926, pp. 613–617. (Abstract by Fred Almquist.)

This article gives an account of the exhaustive study of dengue by Lieut. Col. J. F. Siler, and Majs. M. W. Hall and A. P. Hitchens, begun in 1924 in the Philippines. This study printed in a set of papers is made into a volume of 476 pages.

Part I deals with the history of dengue, calling attention to the resemblance between dengue and the milder forms of yellow fever. Attention is also called to the fact that the transmitting agent for both is *Aëdes aegypti* and that *Culex quinquefasciatus* is not a vector.

Part II describes the actual experiments on 64 volunteers. Dengue was produced in 81 per cent of the volunteers. From the experiments it was shown, among other things, that the incubation period of 11 days was fixed; the stage in which dengue patients are infective to *Aëdes aegypti* is the first three days;

and that, once capable of transmitting the disease, the mosquito retains this ability through its life.

A third section deals with the epidemiology, of which a complete account is given. This is followed by a summary of the clinical aspects of dengue, then a discussion on immunity, in which it is stated that the natives are naturally immune. A list of preventive methods is given by the authors with the plea that the stamping out of the *Aëdes aegypti* mosquito is the first important step.

Biological Experiments Proving the Identity of American and Asiatic Aëdes Aegypti. W. H. Hoffman. *Sanidad y Beneficencia*, Habana, vol. 32, Nos. 1, 2, 3, January, February, and March, 1927. (Abstract by L. M. Fisher.)

On several occasions, eggs of mosquitoes from the Far East have been examined and studied by such authorities as Stanton, Brug, and Christopheres in like manner as the author studied material from Java. While individual variations in the species were observed, no morphological differences were encountered.

On February 15, 1927, eggs were received from Dr. S. L. Brug, of Batavia. They had been laid December 6, 1926. From these, on March 3, developed four female adults. A male mosquito from Cuba was placed in the cage with them. They were permitted to feed on the author, and more than 100 eggs were laid from which a new generation of mosquitoes developed by March 21.

The experiment proves that the Cuban and the Javanese mosquitoes belong to the same species.

The author believes the present cosmopolitan species originated in West Africa and has been carried by commerce to America and Eastern Asia.

Activated Sludge Practices in Canada. Frederick A. Dallyn. Proceedings of Ninth Texas Water Works Short School, pp. 342–349. (Abstract by Chester Cohen.)

"Climate, especially temperature, plays a very definite rôle in the activated sludge process." The author is of the opinion that biological fermentation arrests rather than assists the treatment process. When high temperatures exist, causing oxygen demand in excess of the ability of the mechanism to supply, the process of sewage digestion is thrown out of balance. The design of Canadian plants recognizes the part that physical geography plays in the operation of the activated sludge units. Preliminary treatment might well consist of screens, grit chambers, disintegration chambers, and preliminary sedimentation. The reasons for these preliminary units are obvious, since they serve to lighten the load on the activation tanks.

The saw-tooth bottom activation channel has been abandoned in favor of flat bottom with diffuser plates parallel to the sides and off center. Experimental work demonstrates that the absorption of the oxygen by the liquid media takes place in three ways: (1) By diffusion of the air introduced by the diffuser plates; (2) from the surface of the liquid; (3) from the excess oxygen in the returned sludge. It is estimated that only 5 per cent of the air introduced by the diffusers in the aeration tanks is utilized and only about 25 or 30 per cent of the oxygen in the system can be attributed to the air introduced in this manner. The storage time in the aeration channels varies from six hours to three hours and less; and the presence of some iron in the system greatly increases the oxygen transference and permits lessening of the contact period. The storage period in sedimentation tanks in Canada varies widely, being anywhere from three-fourths to two and one-half hours. The question of disposing of the activated sludge not required in the system has not proved a serious problem; first, because the actual bulk has not been as great as is reported in the early literature; and, second, by recognition of the advantage of sludge storage and behavior of such sludge, favorable consideration was early given to this method of disposal.

The cost of the treatment totals $21.60 per million gallons, which is made up of detailed costs as follows: Power, $3.50; labor, $5; sludge removal and drying, 60 cents; repairs and alterations, 50 cents; capital charges (including retirements), $12.

The Changes in the Bacterial Content of Stored Normal and Typhoid Feces. E. O. Jordan, *Journal of Infectious Diseases*, 1926, vol. 38, pp. 306–322. (Abstract by W. W. C. Topley in the *Bulletin of Hygiene*, vol. 2, No. 3, March, 1927, p. 228.)

"The author has studied the changes which occur in the bacterial content of feces on storage. His results show that the number of viable bacteria increases steadily during the first 24 to 48 hours, during which time there may be a hundredfold increase or more. The viable count then diminishes, at first rapidly and then more slowly; but it may be many weeks before it sinks to its original figure. The *B. coli* count rises sharply during the first few days of storage; indeed, the early increase in the viable count appears to be largely due to the multiplication of this organism; it then falls rapidly and continuously, and during the later period of storage *B. coli* is largely replaced by other bacteria, the nature of which has not yet been determined."

Stream Pollution. Report of Bureau of Sanitary Engineering, Maryland State Department of Health, 1926. 19 pages. (Abstract by I. W. Mendelsohn.)

Studies in stream pollution included the following: (1) Dissolved oxygen and pH tests to determine whether deposits from an industrial alcohol plant and chemical works already on the bottom of Curtis Bay and Marley and Furnace Creeks were partially responsible for intermittent high fish mortality; (2) operation of a tannery waste disposal plant; (3) investigation of all paper and pulp mills in the State to determine the waste losses and the degree of stream pollution; (4) a plant to treat wastes from a congoleum works, and to include large settling tank with return of supernatant liquid to paper machines for reuse; coagulation basins for alum treatment at 15 grains per gallon; discharge of settled effluent into body of water; centrifuging and dumping sludge on low ground; (5) disposal of wastes from a rolling mill by the recovery of sulphuric acid and ferrous sulphate by refrigeration; (6) disposal of wastes from steel and tin-plate mills and wire-nail mill; (7) coagulation tests on milk wastes; and (8) treatment of tomato-canning wastes with iron and lime.

Intermittent Sand Filters. Ernest Boyce. Bulletin 86 of the Engineering Extension Department, Iowa State College, vol. 25, No. 35, January 26, 1927. 7 pages. (Abstract by W. L. Havens.)

This paper, presented at the eighth conference on sewage treatment at Ames, Iowa, November, 1926, outlines the use, construction, and operation of intermittent sand filters. The author, who is chief sanitary engineer of the Kansas State Board of Health, suggests that sand filters may come into greater use with chlorination as a finishing process designed to effect bacterial improvement. It is stated that 28 sand filters are found in the 93 treatment plants in Kansas. Narrower spacing of underdrains—5 to 6 feet—is favored. Flap-valve protection against backwater is advised, as well as protection from silting through erosion of banks. Distribution devices show little change; the open concrete flume with adjustable lateral ports is favored.

Burning Gas from Imhoff Tanks at Decatur, Illinois. William D. Hatfield, superintendent and chemist, Decatur Sanitary District. *Water Works*, vol. 66, No 3, March, 1927, pp. 99–101. (Abstract by D. E. Kepner.)

Due to the strength and high temperature of the Decatur sewage, bacterial decomposition and putrefaction take place rapidly in the sewers and in the Imhoff tank, producing large quantities of odorous gases. A collecting arrangement has been provided by means of which about 100,000 cubic feet of gas per

day is now caught, having a heat value of 700 British thermal units per cubic foot. By burning this gas, the odor nuisance about the treatment plant was immediately reduced. Details are given regarding the composition of the gas under different conditions.

Sewerage. Report of Bureau of Sanitary Engineering, Maryland State Department of Health, 1926. 19 pages. (Abstract by I. W. Mendelsohn.)

Sewerage improvements were made in various cities in the State. Special sewage treatment studies were made, such as the best method of bringing about rapid digestion of sewage sludge in primary settling tanks; utilization of sewage gases; operation of activated sludge plant with certain coagulants and catalytic agents; and digestion of activated sludge with hydrogen ion control.

Report of Bureau of Sanitary Engineering, Maryland State Department of Health, 1926. 19 pages. (Abstract by I. W. Mendelsohn.)

Water supply.—Installation of public waterworks systems progressed during the year. A table is given showing comparative data on water supplies in Maryland for 1916 and 1926. The percentage of population using public water supplies increased from 62 in 1916 to 71.6 per cent in 1926. The number of treated water supplies increased and the per cent of the total population of the State using these supplies increased from 54.9 to 66.3.

On July 1, 1926, the State board of health passed regulations stating that "no physical connection shall be permitted between a potable water supply and an industrial, fire, or other auxiliary or emergency water supply. This prohibition applies to all piping systems either inside or outside of any building or buildings. All existing cross-connections between a potable water supply and an industrial, fire, or other auxiliary or emergency water supply shall be removed on or before October 1, 1926."

Typhoid Outbreak at Watseka, Ill. Anon. *Engineering News-Record,* vol. 99, No. 2, July 14, 1927, p. 53. (Abstract by Arthur P. Miller.)

In October-November, 1926, Watseka, Ill., with a population of 5,000, only 750 of whom used city water, had a typhoid fever epidemic resulting in 34 cases and 3 deaths. The city water has repeatedly been classed as unsafe, and, although not proved, the epidemic was attributed to it. The theoretical cause of the epidemic was that a surcharged sewer had polluted the ground near the public wells. The wells are pumped by direct suction, and periodical examinations showed water of doubtful and sometimes unsafe quality. As is often the case, a chlorinator installed November, 1926, was put into operation only after the epidemic was under way.

Studies on the Bacteriophage of D'Herelle. On the Particulate Nature of Bacteriophage. J. Bronfenbrenner. *Journal of Experimental Medicine,* vol. 45, No. 5, May 1, 1927, pp. 873–886. (Abstract by C. T. Butterfield.)

When bacteriophage filtrates are subjected to prolonged dialysis under osmotic pressure against water, dialysis occurs only during the first few days. The bulk of the original lytic agent remains inside the membrane and will no longer diffuse through it even if the membrane is replaced with a fresh one of similar permeability.

The preparation of an ultrafilter is described. When bacteriophage filtrates were subjected to ultrafiltration under pressure, the residue on the filter was washed with water repeatedly without passing any more of the active agent. If broth was substituted for water as the washing liquid, additional amounts of the active agent would pass through the filter.

The author interprets the results as indicating "that the colloidal particles present in the lytic filtrates (and apparently endowed with properties of bacterio-

phage) do not represent autonomous units of the active agent, but merely serve as a vehicle on which the agent is absorbed. They vary in size within limits wide enough to permit fractionation by means of ultrafiltration. When the coarser particles retained by the ultrafilter are washed with broth, some of the active agent is detached from its coarse vehicle particles. This agent, now more highly dispersed, is capable of passing the filter which held it back previously."

Studies on the Bacteriophage of D'Herelle. The mechanism of Lysis of Dead Bacteria in the Presence of Bacteriophage. J. Bronfenbrenner and R. Muckenfuss. *Journal of Experimental Medicine*, vol. 45, No. 5, May 1, 1927, pp. 887–909. (Abstract by C. T. Butterfield.)

Dead staphylococci were autolysed in the presence of the specific bacteriophage only when some living staphylococci were present. The lysis must be initiated on the living cocci. It is necessary to control the proportions of live and dead bacteria and of bacteriophage in the mixture. If an excess of dead bacteria is present, no lysis will take place. The authors interpret this as indicating that all of the lytic agent is adsorbed by the dead cells and the necessary initiatory lysis of living cells can not take place.

The authors further show that the agent causing the lysis of dead staphylococci does not pass through a suitable semipermeable membrane. The lytic agent for the living cocci did diffuse readily. They also demonstrated the difference between the two lytic agents by filtration and adsorption. A similar lytic agent for dead staphylococci was found in staphylococcus cultures undergoing spontaneous autolysis in the absence of bacteriophage.

A lytic agent for dead cells of *B. coli* and *B. dysenteriae* was not satisfactorily demonstrated.

Some Relations between Sewage Treatment and Water Purification. Paul Hansen. *The American City*, vol. 36, No. 6, June, 1927, pp. 765–768. (Abstract by W. L. Havens.)

In 1912 the International Joint Commission on the Pollution of Boundary Waters between the United States and Canada arrived at the tentative conclusion that raw water delivered to water purification works should not contain, as a yearly average, more than 500 *B. coli* per 100 c. c.

As the result of a statistical study of the performance of 25 water purification plants in the central west, made by H. W. Streeter in 1921 and 1922, it was concluded that, in order to obtain a purified water complying with the old United States Treasury standard for purity of drinking water on interstate carriers (a *B. coli* content of 2 per 100 c. c.), the raw water should not have an average *B. coli* content of more than 650 per c. c. Later studies by Streeter in 1923 on the performance of 10 Ohio River plants resulted in the conclusion that chlorination of the filtered water is necessary in order to meet the new Treasury standard when the raw waters contain *B. coli* to the extent of 100 per 100 c. c. and even less. In the light of these studies the Public Health Service has indicated a content of 100 *B. coli* per 100 c. c. in the raw water as a maximum average limit where filtration without sterilization is employed. Adherence to these standards may mean in certain cases the selection of a water supply less subject to pollution, an elaboration of the purification process, or treatment of the sewage discharged above waterworks intakes.

In arriving at any balance between water purification and sewage treatment, it is important to note that main dependence should be placed upon water purification rather than upon sewage treatment as a means of obtaining a safe public water supply. Even in the case of Great Lakes cities which use the Lakes both for water supply and for receiving sewage, there is little doubt that the maximum of health protection can be gained through water purification, even though this treatment involve aeration, double coagulation, double sedi-

mentation, double filtration, and double chlorination. At Portsmouth, Ohio, and in the various communities comprising the North Shore Sanitary District, local conditions have indicated that sewage treatment comprising sedimentation followed by chlorination represents the economic maximum to which sewage treatment is warranted at the present time.

It is concluded in this article that, first, water supplies taken from streams and other bodies of water with populations on their watersheds must be purified; second, cities discharging sewage into streams used below as sources of public water supply may be required to purify their sewage to a degree which will not place too great a burden on the water purification works (now tentatively measured by an average *B. coli* content not in excess of 500 per 100 c. c); third, further study is merited of the subject of the desirability of more water purification to meet more stream pollution than permitted by present tentative standards; and, fourth, there should be maintained a degree of stream-pollution control which will prevent the streams from becoming unsightly and malodorous and destructive of fish life.

DEATHS DURING WEEK ENDED AUGUST 20, 1927

Summary of information received by telegraph from industrial insurance companies for week ended August 20, 1927, and corresponding week of 1926. (From the Weekly Health Index, August 24, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Aug 20, 1927	Corresponding week 1926
Policies in force	68, 209, 364	65, 099, 898
Number of death claims	11, 025	10, 020
Death claims per 1,000 policies in force, annual rate	8. 4	8. 0

Deaths from all causes in certain large cities of the United States during the week ended August 20, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, August 24, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Aug. 20, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Aug. 20, 1927 [2]
	Total deaths	Death rate [1]		Week ended Aug 20, 1927	Corresponding week 1926	
Total (67 cities)	5, 438	10. 0	[3] 10 6	604	[3] 782	[4] 53
Albany [5]	20	8. 7	11. 8	1	3	21
Atlanta	62			12	9	
White	40			9	5	
Colored	22	(6)		3	4	
Baltimore [5]	190	12 1	13. 7	31	34	93
White	145		11. 7	23	26	89
Colored	45	(6)	25. 4	8	8	124
Birmingham	69	16. 7	14. 1	11	5	
White	36		9. 4	5	1	
Colored	33	(6)	21. 4	6	4	
Boston	192	12. 6	11. 7	32	37	89
Bridgeport	27			2	2	37
Buffalo	116	11. 0	11. 2	16	18	67
Cambridge	22	9. 3	7. 7	3	4	53
Camden	20	7. 8	10 7	2	4	34
Canton	23	10. 6	8. 1	2	3	47
Chicago [5]	550	9. 2	9. 2	49	58	42
Cincinnati	107	13. 5	17. 9	11	22	69
Cleveland	147	7. 8	8. 9	13	10	34
Columbus	67	12. 0	11. 3	8	11	74

Footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended August 20, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926—Continued

City	Week ended Aug. 20, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Aug. 20, 1927 [2]
	Total deaths	Death rate [1]		Week ended Aug. 20, 1927	Corresponding week 1926	
Dallas	49	12.2	13.9	3	13	
White	42		12.7	3	12	
Colored	7	(6)	21.2	0	1	
Dayton	26	7.5	7.4	2	4	33
Denver	62	11.1	11.9	7	1	
Des Moines	18	6.3	9.3	3	1	50
Duluth	16	7.3	10.6	1	1	22
El Paso	31	14.2	16.7	7	4	
Fall River [5]	16	6.3	12.3	7	7	124
Flint	26	9.5	6.1	5	1	82
Fort Worth	30	9.5	8.5	3	8	
White	20		7.8	3	7	
Colored	10	(6)	13.7	0	1	
Grand Rapids	25	8.2	11.4	2	4	29
Houston	65			7	5	
White	47			5	4	
Colored	18	(6)		2	1	
Indianapolis	87	12.1	13.2	12	11	94
White	78		12.9	9	8	81
Colored	9	(6)	15.4	3	3	183
Jersey City	50	8.1	9.2	7	5	52
Kansas City, Kans	25	11.1	11.6	3	2	58
White	18		9.7	1	2	22
Colored	7	(6)	20.3	2	0	304
Kansas City, Mo	70	9.5	12.9	6	12	
Knoxville	26	13.3		2		
White	24			2		
Colored	2	(6)		0		
Los Angeles	200			19	19	54
Louisville	65	10.6	15.3	15	7	128
White	51		14.4	13	7	126
Colored	14	(6)	20.0	2	0	140
Lowell	19	9.0	11.8	3	5	58
Lynn	20	9.9	8.0	3	4	79
Memphis	74	21.6	14.4	8	8	
White	37		10.1	5	6	
Colored	37	(6)	22.3	3	2	
Milwaukee	87	8.5	7.7	11	15	51
Minneapolis	65	7.7	8.8	8	7	45
Nashville [5]	37	14.0	14.8	3	4	
White	18		12.8	2	2	
Colored	19	(6)	20.1	1	2	
New Bedford	22	9.6	9.6	3	4	52
New Haven	48	13.5	6.3	1	2	14
New Orleans	151	18.6	18.2	16	19	
White	83		15.1	6	11	
Colored	68	(6)	26.8	10	8	
New York	1,066	9.3	9.4	115	163	48
Bronx borough	124	7.0	6.4	10	7	32
Brooklyn borough	378	8.7	9.0	49	67	51
Manhattan borough	423	12.2	12.4	43	79	50
Queens borough	108	7.0	6.9	10	8	43
Richmond borough	33	11.7	9.1	3	2	56
Newark, N. J	64	7.2	9.9	10	18	50
Oakland	50	9.8	8.8	1	6	12
Oklahoma City	26			5	6	
Omaha	40	9.5	11.3	3	4	33
Paterson	30	10.9	10.9	2	1	35
Philadelphia	356	9.1	10.5	29	54	39
Pittsburgh	142	11.5	10.0	23	26	80
Portland, Oreg	68			8	2	84
Providence	52	9.6	11.9	7	11	59
Richmond	46	12.5	13.8	10	9	132
White	24		9.7	4	5	81
Colored	22	(6)	23.7	6	4	228
Rochester	66	10.6	9.6	10	5	84
St. Louis	150	9.3	10.2	6	18	
St. Paul	55	11.5	10.7	2	4	18
Salt Lake City [5]	26	10.0	12.5	1	5	15

Footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended August 20, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926—Continued

City	Week ended Aug. 20, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Aug 20, 1927 [2]
	Total deaths	Death rate [1]		Week ended Aug 20, 1927	Corresponding week 1926	
San Antonio	64	15.8	15.3	13	18	----------
San Diego	36	16.3	13.3	2	1	43
San Francisco	107	9.7	13.9	3	1	19
Schenectady	14	7.8	11.2	0	7	0
Seattle	53	----------	----------	3	3	31
Somerville	14	7.2	5.2	1	2	36
Spokane	16	7.7	12.0	0	2	0
Springfield, Mass	25	8.9	8.3	1	4	15
Syracuse	43	11.4	11.8	4	4	51
Tacoma	25	12.2	14.3	0	1	0
Toledo	37	6.3	12.9	3	11	29
Trenton	28	10.7	11.7	4	2	70
Utica	22	11.1	6.6	1	2	23
Washington, D. C	105	10.1	8.9	16	17	93
White	68	----------	6.7	9	7	76
Colored	37	([6])	15.2	7	10	129
Waterbury	14	----------	----------	1	4	24
Wilmington, Del	14	5.8	10.1	4	5	99
Worcester	36	9.6	7.6	4	3	48
Yonkers	14	6.1	7.6	3	3	68
Youngstown	27	8.3	8.5	6	8	84

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births Cities left blank are not in the registration area for births.
[3] Data for 66 cities
[4] Data for 60 cities
[5] Deaths for week ended Friday, Aug 19, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15, Birmingham, 39; Dallas, 15; Fort Worth, 14, Houston, 25, Indianapolis, 11; Kansas City, Kans., 14. Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30, New Orleans, 26; Richmond, 32, and Washington, D. C, 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended August 27, 1927

DIPHTHERIA	Cases
Alabama	38
Arkansas	6
California	67
Colorado	13
Connecticut	19
Delaware	1
Florida	13
Georgia	25
Illinois	55
Indiana	23
Kansas	9
Louisiana	12
Maine	5
Maryland [1]	30
Massachusetts	52
Michigan	53
Minnesota	27
Mississippi	27
Missouri	24
Montana	4
Nebraska	4
New Jersey	69
New Mexico	3
New York [2]	53
North Carolina	65
Oklahoma [3]	35
Oregon	1
Pennsylvania	125
Rhode Island	6
South Carolina	21
Tennessee	21
Texas	18
Utah [1]	2
Vermont	2
Washington	8
West Virginia	7
Wisconsin	14

[1] Week ended Friday.
[2] Exclusive of New York City.
[3] Exclusive of Oklahoma City and Tulsa.

INFLUENZA	Cases
Alabama	12
Arkansas	14
California	5
Connecticut	1
Florida	5
Georgia	20
Illinois	6
Indiana	16
Louisiana	5
Maryland [1]	8
Massachusetts	4
Michigan	1
New Jersey	2
Oklahoma [3]	5
Oregon	2
South Carolina	155
Tennessee	5
Texas	25
West Virginia	4
Wisconsin	10

MEASLES	Cases
Alabama	60
Arizona	2
Arkansas	17
California	38
Colorado	1
Connecticut	11
Delaware	1
Florida	7
Georgia	2
Idaho	1
Illinois	17
Indiana	8
Kansas	17
Louisiana	6
Maryland [1]	5

[1] Week end Friday.
[3] Exclusive of Oklahoma City and Tulsa.

MEASLES—continued

	Cases
Massachusetts	39
Michigan	12
Minnesota	7
Missouri	6
Montana	2
Nebraska	1
New Jersey	6
New Mexico	4
New York [2]	43
North Carolina	164
Oklahoma [3]	18
Oregon	7
Pennsylvania	58
South Carolina	42
Tennessee	11
Utah [1]	1
Vermont	9
Washington	10
West Virginia	6
Wisconsin	42
Wyoming	1

MENINGOCOCCUS MENINGITIS

	Cases
Alabama	4
California	3
Colorado	1
Maryland [1]	1
Minnesota	4
Missouri	1
Montana	1
Oklahoma [3]	1
Oregon	2
Tennessee	1
Texas	1
Washington	1
West Virginia	1
Wisconsin	4

POLIOMYELITIS

	Cases
Alabama	1
Arkansas	2
California	48
Colorado	2
Connecticut	12
Florida	2
Illinois	24
Indiana	4
Kansas	3
Louisiana	2
Maine	7
Massachusetts	55
Michigan	10
Minnesota	3
Mississippi	2
Missouri	6
Nebraska	4
New Jersey	20
New Mexico	6
New York [2]	23
Ohio [4]	225
Oklahoma [3]	11
Oregon	3
Pennsylvania	8
Rhode Island	4
South Dakota	1

[1] Week ended Friday.
[2] Exclusive of New York City.
[3] Exclusive of Oklahoma City and Tulsa.
[4] Cases reported from Aug. 1 to Aug. 30.

POLIOMYELITIS—continued

	Cases
Tennessee	4
Texas	12
Washington	8
West Virginia	11
Wisconsin	2
Wyoming	1

SCARLET FEVER

	Cases
Alabama	15
Arizona	2
Arkansas	2
California	43
Colorado	13
Connecticut	8
Delaware	2
Florida	2
Georgia	20
Idaho	1
Illinois	60
Indiana	30
Kansas	27
Louisiana	6
Maine	8
Maryland [1]	16
Massachusetts	55
Michigan	68
Minnesota	42
Mississippi	5
Missouri	27
Montana	17
Nebraska	8
New Jersey	29
New Mexico	2
New York [2]	57
New Jersey	29
Oklahoma [3]	12
Oregon	11
Pennsylvania	109
Rhode Island	7
South Carolina	14
South Dakota	3
Tennessee	16
Texas	5
Utah [1]	2
Vermont	6
Washington	6
West Virginia	24
Wisconsin	28
Wyoming	5

SMALLPOX

	Cases
Arkansas	1
California	3
Idaho	1
Illinois	7
Indiana	13
Kansas	1
Michigan	14
Missouri	11
Nebraska	1
New York [2]	1
North Carolina	6
Oklahoma [3]	3

[1] Week ended Friday.
[2] Exclusive of New York City.
[3] Exclusive Oklahoma Coty and Tulsa.

SMALLPOX—continued

State	Cases
Oregon	8
South Carolina	4
South Dakota	5
Tennessee	7
Texas	4
Utah [1]	3
Washington	9
West Virginia	7
Wisconsin	6

TYPHOID FEVER

State	Cases
Alabama	105
Arkansas	45
California	15
Colorado	15
Connecticut	2
Delaware	1
Florida	15
Georgia	68
Idaho	1
Illinois	64
Indiana	22
Kansas	19
Louisiana	39
Maine	15
Maryland [1]	50

[1] Week ended Friday.

TYPHOID FEVER—continued

State	Cases
Massachusetts	27
Michigan	30
Minnesota	4
Mississippi	29
Missouri	18
Montana [5]	8
Nebraska	6
New Jersey	9
New Mexico	14
New York [2]	24
North Carolina	58
Oklahoma [3]	112
Oregon	4
Pennsylvania	49
Rhode Island	4
South Carolina	101
Tennessee	153
Texas	11
Utah [1]	4
Washington	3
West Virginia	40
Wisconsin	10
Wyoming	1

[1] Week ended Friday.
[2] Exclusive of New York City.
[3] Exclusive of Oklahoma City and Tulsa.
[5] Includes 3 cases in delayed report.

Reports for Week Ended August 20, 1927

DIPHTHERIA

State	Cases
District of Columbia	8
North Dakota	6

INFLUENZA

State	Cases
District of Columbia	1

MEASLES

State	Cases
District of Columbia	1

SCARLET FEVER

State	Cases
District of Columbia	5
North Dakota	11

SMALLPOX

State	Cases
District of Columbia	1
North Dakota	1

TYPHOID FEVER

State	Cases
District of Columbia	4

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
June, 1927										
Delaware		6			20		0	10	0	3
July, 1927										
Alabama	1	71	53	530	228	127	2	36	66	414
Florida	3	21	12	25	64	1	4	14	24	59
Illinois	20	377	121	11	562	3	26	397	67	141
Indiana	3	89	15		149		1	142	284	41
Louisiana	1	52	26	279	134	127	20	18	13	146
Maryland	2	150	7	3	56	3	0	87	0	64
Minnesota	13	90	7		104		7	286	12	16
Missouri	4	92		18	171		4	120	61	84
Ohio	5	291	16		166		32	373	95	85
Oklahoma [1]	6	32	33	463	236	120	16	59	98	372
Rhode Island	2	29			6		0	52	0	4
South Carolina	0	94	510	1,597	535	789	8	34	35	542
West Virginia	2	50	7		214		2	128	116	89
Wisconsin	33	142	58		1,170		5	290	83	15
Wyoming	0	2	3		40		1	27	15	1

[1] Exclusive of Oklahoma City and Tulsa.

June, 1927

	Cases
Delaware:	
Chicken pox	12
Mumps	1
Whooping cough	2

July, 1927

	Cases
Actinomycosis:	
Illinois	1
Anthrax:	
Oklahoma	1
Chicken pox:	
Alabama	15
Florida	3
Illinois	422
Indiana	68
Louisiana	1
Maryland	123
Minnesota	321
Missouri	36
Ohio	402
Oklahoma	21
Rhode Island	17
South Carolina	64
West Virginia	45
Wisconsin	397
Wyoming	9
Dengue	
Alabama	6
South Carolina	22
Dysentery	
Florida	2
Illinois	48
Louisiana	8
Maryland	12
Minnesota	3
Oklahoma	142
German measles:	
Illinois	17
Maryland	6
Ohio	13
Rhode Island	1
Wisconsin	47
Hookworm disease:	
Florida	308
Louisiana	7
South Carolina	131
Impetigo contagiosa:	
Maryland	1
Lead poisoning:	
Illinois	12
Ohio	21
Leprosy:	
Louisiana	1
Minnesota	1
Lethargic encephalitis.	
Alabama	3
Illinois	11
Louisiana	4
Maryland	1
Minnesota	3
Ohio	4
Wisconsin	1
Malta fever:	
Minnesota	1
Mumps:	
Alabama	33
Florida	8

July, 1927—Continued

	Cases
Mumps—Continued.	
Illinois	526
Indiana	26
Louisiana	7
Maryland	34
Missouri	188
Ohio	330
Oklahoma	10
Rhode Island	8
Wisconsin	343
Ophthalmia neonatorum:	
Illinois	54
Maryland	1
Ohio	117
Oklahoma	1
Rhode Island	2
Paratyphoid fever:	
Louisiana	2
Ohio	5
South Carolina	37
Puerperal fever:	
Illinois	13
Rabies in animals:	
Maryland	8
Missouri	2
South Carolina	16
Rabies in man:	
Illinois	1
Indiana	1
Wisconsin	1
Rocky Mountain spotted or tick fever:	
Wyoming	19
Scabies	
Oklahoma	1
Septic sore throat.	
Illinois	4
Louisiana	2
Maryland	3
Missouri	18
Ohio	54
Rhode Island	2
Tetanus	
Florida	8
Illinois	12
Louisiana	4
Maryland	5
Missouri	4
Oklahoma	2
Trachoma	
Illinois	7
Louisiana	1
Minnesota	1
Missouri	5
Ohio	3
Oklahoma	6
Wisconsin	1
Wyoming	2
Tularaemia	
Louisiana	1
Wyoming	3
Typhus fever:	
Alabama	9
Florida	5
Oklahoma	1
Vincent's angina:	
Maryland	4
Oklahoma	1

July, 1927—Continued

Whooping cough:	Cases
Alabama	206
Florida	41
Illinois	1,224
Indiana	247
Louisiana	41
Maryland	278
Minnesota	76
Missouri	348

July, 1927—Continued

Whooping cough—Continued.	Cases
Ohio	643
Oklahoma	75
Rhode Island	15
South Carolina	530
West Virginia	151
Wisconsin	508
Wyoming	34

POLIOMYELITIS IN OHIO

The State health officer of Ohio, under date of August 30, 1927, reports 225 cases of poliomyelitis with 24 deaths in Ohio since August 1. About 40 counties were involved.

RECIPROCAL NOTIFICATIONS

Notifications regarding communicable diseases sent during the month of July, 1927, to other State health departments by departments of health of certain States

Referred by—	Chicken pox	Diphtheria	Dysentery	Leprosy	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Connecticut		1						1	1
Illinois		1				5	7	7	1
Minnesota	1		1	1			30		
New York		1			3			2	
Rhode Island							1		
Washington						2			

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 97 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,530,000. The estimated population of the 91 cities reporting deaths is more than 29,860,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended August 13, 1927, and August 14, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diptheria:			
42 States	997	829	
97 cities	533	396	495
Measles.			
41 States	887	1,415	
97 cities	159	333	
Poliomyelitis:			
42 States	248	89	
Scarlet fever:			
42 States	941	969	
97 cities	336	294	250
Smallpox:			
42 States	222	310	
97 cities	22	38	29
Typhoid fever.			
42 States	1,188	1,361	
97 cities	145	194	192
Deaths reported			
Influenza and pneumonia:			
91 cities	337	283	
Smallpox·			
91 cities	0	0	

City reports for week ended August 13, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during non-epidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria: Cases, estimated expectancy	Diphtheria: Cases reported	Influenza: Cases reported	Influenza: Deaths reported	Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
NEW ENGLAND									
Maine:									
Portland	75,333	0	1	10	0	0	0	0	0
New Hampshire:									
Concord	22,546	0	0	0	0	0	1	0	1
Manchester	83,097	0	0	0	0	0	0	0	1
Nashua.	29,723	0	0	0	0	0	0	0	0
Vermont:									
Barre.	10,008	0	0	0	0	0	0	0	0
Burlington	24,089	3	0	0	0	0	1	1	0
Massachusetts:									
Boston	779,620	9	29	8	0	1	22	9	15
Fall River	128,993	0	2	0	0	0	0	0	3
Springfield	142,065	0	1	0	0	0	0	1	0
Worcester	190,757	0	3	1	0	0	0	0	2
Rhode Island:									
Pawtucket	69,760	0	0	0	0	0	0	0	3
Providence	267,918	0	3	4	0	0	1	0	2
Connecticut.									
Bridgeport	(1)	0	4	7	0	0	0	0	2
Hartford	160,197	0	2	0	0	0	0	1	2
New Haven	178,927	0	1	0	0	0	3	0	3

[1] No estimate made.

City reports for week ended August 13, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
MIDDLE ATLANTIC									
New York:									
Buffalo	538, 016	1	10	4	--------	0	8	3	3
New York	5, 873, 356	19	102	127	7	3	14	16	75
Rochester	316, 786	0	4	2	--------	0	0	2	1
Syracuse	182, 003	4	2	1	--------	0	3	0	2
New Jersey:									
Camden	128, 642	0	2	2	0	0	0	2	1
Newark	452, 513	12	6	9	0	0	4	4	3
Trenton	132, 020	0	1	2	0	0	0	0	0
Pennsylvania:									
Philadelphia	1, 979, 364	17	33	28	--------	1	6	12	17
Pittsburgh	631, 563	7	12	21	--------	0	15	2	13
Reading	112, 707	2	2	1	--------	0	7	1	1
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409, 333	1	5	4	0	0	1	0	5
Cleveland	936, 485	13	18	41	2	0	3	23	8
Columbus	279, 836	0	2	1	0	1	0	0	5
Toledo	287, 380	3	4	3	0	2	1	2	2
Indiana:									
Fort Wayne	97, 846	0	1	0	0	0	0	0	2
Indianapolis	358, 819	4	3	3	0	0	0	6	1
South Bend	80, 091	0	1	1	0	0	0	0	0
Terre Haute	71, 071	0	0	0	0	0	0	0	0
Illinois:									
Chicago	2, 995, 239	32	48	58	0	1	5	12	26
Springfield	63, 923	0	0	1	0	0	1	0	1
Michigan:									
Detroit	1, 245, 824	17	30	23	0	1	4	1	10
Flint	130, 316	0	4	5	0	0	0	0	1
Grand Rapids	153, 698	0	2	0	0	0	5	0	0
Wisconsin:									
Kenosha	50, 891	0	0	0	0	0	0	2	0
Madison	46, 385	0	0	0	0	0	0	1	0
Milwaukee	509, 192	6	9	4	0	0	9	4	2
Racine	67, 707	0	1	0	0	0	0	0	0
Superior	39, 671	0	0	0	0	0	0	0	1
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110, 502	2	1	1	0	0	0	1	0
Minneapolis	425, 435	9	12	12	0	0	1	0	3
St. Paul	246, 001	1	11	6	0	2	3	1	4
Iowa:									
Davenport	52, 469	0	0	2	0	--------	0	0	--------
Des Moines	141, 441	0	2	0	0	--------	0	0	--------
Sioux City	76, 411	0	1	0	0	--------	1	0	--------
Waterloo	36, 771	0	0	0	0	--------	1	0	--------
Missouri:									
Kansas City	367, 481	1	2	6	0	0	1	1	9
St. Joseph	78, 342	0	0	0	0	0	0	1	1
St. Louis	821, 543	3	19	7	0	0	2	8	--------
North Dakota:									
Fargo	26, 403	0	0	0	0	0	0	0	0
Grand Forks	14, 811	0	0	0	0	--------	0	0	--------
South Dakota:									
Sioux Falls	30, 127	0	0	0	0	--------	0	0	--------
Nebraska:									
Lincoln	60, 941	0	0	3	0	0	2	4	0
Omaha	211, 768	1	5	1	0	0	0	1	2
Kansas:									
Topeka	55, 411	2	0	1	1	1	1	2	0
Wichita	88, 367	0	0	0	0	0	1	0	2

City reports for week ended August 13, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
SOUTH ATLANTIC									
Delaware									
Wilmington	122,049	1	1	0	0	0	0	0	2
Maryland:									
Baltimore	796,296	4	11	18	0	1	0	0	9
Cumberland	33,741	0	0	1	0	0	0	0	2
Frederick	12,035	0	0	0	0	0	0	0	0
District of Columbia:									
Washington	497,906	0	4	13	0	0	0	0	5
Virginia:									
Lynchburg	30,395	0	0	0	0	0	0	0	0
Norfolk	(1)	0	0	0	1	0	0	0	0
Richmond	186,403	0	4	2	0	0	0	1	0
Roanoke	58,208	0	1	0	0	0	0	0	0
West Virginia:									
Charleston	49,019	0	0	0	0	1	0	0	2
Wheeling	56,208	0	0	0	0	0	0	0	1
North Carolina:									
Raleigh	30,371	0	1	2	0	0	0	0	1
Wilmington	37,061	0	0	0	0	0	0	0	4
Winston-Salem	69,031	0	1	1	0	0	1	6	0
South Carolina:									
Charleston	73,125	0	0	0	1	0	1	0	3
Columbia	41,225	0	0	0	0		4	0	2
Greenville	27,311	0	0	0	0	0	0	0	2
Georgia:									
Atlanta	(1)	0	2	4	7	0	1	0	6
Brunswick	16,809	0	0	0	0	0	0	0	1
Savannah	93,134		0						
Florida:									
Miami	69,754	0		0	1	0	0	0	3
St. Petersburg	26,847		0			0			0
Tampa	94,743	1	0	3	0	0	0	0	1
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	0	0	0	0	0	0	0
Lexington	46,895	0		0	0	0	0	3	0
Louisville	305,935	0	2	0	0	0	1	3	6
Tennessee:									
Memphis	174,533	0	3	0	0	0	1	0	1
Nashville	136,220	0	1	2	0	1	0	0	2
Alabama:									
Birmingham	205,670	0	2	3	3	0	1	0	4
Mobile	65,955	0	0	0	0	0	0	0	0
Montgomery	46,481	0	1	0	0	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	1	0	0	0		0	0	
Little Rock	74,216	0	0	0	0	0	4	0	0
Louisiana:									
New Orleans	414,493	0	5	4	6	3	0	0	7
Shreveport	57,857	0	1	2	0	0	1	4	0
Oklahoma:									
Oklahoma City	(1)	0	1	4	10	0	0	0	3
Tulsa	124,478	0		0	0		1	1	
Texas:									
Dallas	194,450	1	3	4	0	0	0	1	1
Galveston	48,375	0	0	0	0	0	0	0	1
Houston	164,954	0	2	6	0	0	0	1	3
San Antonio	198,069	0	1	6	0	0	0	0	1
MOUNTAIN									
Montana:									
Billings	17,971	0	0	0	0	0	0	0	0
Great Falls	29,883	1	1	0	0	0	0		1
Helena	12,037	0	0	0	0	0	0	0	0
Missoula	12,668	0	0	0	0	0	1	0	0

[1] No estimate made.

City reports for week ended August 13, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
MOUNTAIN—contd.									
Idaho:									
Boise	23,042	0	0	0	0	0	0	0	0
Colorado:									
Denver	280,911	2	9	15		0	2	2	5
Pueblo	43,787	0	1	1	0	0	0	0	1
New Mexico:									
Albuquerque	21,000	0	0	0	0	0	0	0	0
Utah:									
Salt Lake City	130,948	11	2	4	0	0	1	3	0
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	(1)	6	3	4	0		14	1	
Spokane	108,897	5	2	4	0		1	0	
Tacoma	104,455	2	2	5	0	0	0	0	0
Oregon:									
Portland	282,383	2	4	2	0	0	3	0	1
California:									
Los Angeles	(1)	2	24	21	1	1	5	1	9
Sacramento	72,260	0	2	0	0	0	0	0	3
San Francisco	557,530	5	12	7	2	0	3	6	4

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	0	0	0	0	0	0	1	3	0	0	22
New Hampshire:											
Concord	0	1	0	0	0	1	0	0	0	0	7
Manchester	1	0	0	0	0	0	0	0	0	0	13
Nashua	0	0	0	0	0	0	0	0	0	0	5
Vermont:											
Barre	0	0	0	0	0	2	0	0	0	0	4
Burlington	1	0	0	0	0	1	0	0	0	0	6
Massachusetts:											
Boston	15	27	0	0	0	10	3	7	0	12	171
Fall River	0	1	0	0	0	2	1	2	0	0	18
Springfield	1	1	0	0	0	1	1	0	0	3	28
Worcester	2	1	0	0	0	7	0	0	0	3	46
Rhode Island:											
Pawtucket	0	0	0	0	0	0	0	0	0	0	17
Providence	2	6	0	0	0	4	0	1	0	9	46
Connecticut:											
Bridgeport	2	2	0	0	0	1	1	0	0	0	25
Hartford	1	0	0	0	0	1	1	0	0	20	66
New Haven	1	1	0	0	0	0	2	0	0	4	13
MIDDLE ATLANTIC											
New York:											
Buffalo	5	8	0	0	0	9	2	2	0	37	116
New York	26	37	0	0	0	[2] 90	37	16	2	117	1,126
Rochester	3	4	0	0	0	1	1	1	0	2	54
Syracuse	3	1	0	0	0	1	0	0	0	5	41

[1] No estimate made.

[2] Pulmonary tuberculosis only.

City reports for week ended August 13, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
MIDDLE ATLANTIC—continued											
New Jersey.											
Camden	1	0	0	0	0	1	2	0	0	5	22
Newark	4	4	0	0	0	8	1	1	0	40	84
Trenton	1	0	0	0	0	2	1	0	0	0	27
Pennsylvania:											
Philadelphia	17	22	0	0	0	29	12	10	0	30	350
Pittsburgh	9	3	0	0	0	7	2	1	1	16	128
Reading	1	0	0	0	0	3	1	0	0	10	20
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	3	6	1	0	0	11	2	5	2	0	124
Cleveland	10	11	1	0	0	18	5	6	0	26	155
Columbus	2	8	0	0	0	5	1	0	0	11	68
Toledo	3	0	1	0	0	4	2	2	0	16	58
Indiana											
Fort Wayne	0	1	1	0	0	1	0	0	0	1	25
Indianapolis	2	2	1	2	0	4	2	0	1	2	86
South Bend	1	0	0	0	0	1	0	0	0	0	11
Terre Haute	0	0	0	3	0	2	1	0	0	0	15
Illinois											
Chicago	25	33	0	2	0	46	6	8	0	133	628
Springfield	1	0	0	0	0	0	0	0	0	0	20
Michigan:											
Detroit	22	23	3	0	0	17	6	2	0	99	232
Flint	3	5	0	0	0	0	0	0	0	1	20
Grand Rapids	2	2	0	0	0	0	1	0	0	6	21
Wisconsin											
Kenosha	1	5	0	0	0	0	0	0	0	1	5
Madison	0	0	0	0	0	0	0	0	0	1	6
Milwaukee	6	13	1	0	0	4	0	0	0	28	90
Racine	1	0	0	0	0	0	0	0	0	2	5
Superior	1	0	0	0	0	0	0	0	0	0	6
WEST NORTH CENTRAL											
Minnesota:											
Duluth	3	3	0	0	0	3	0	0	0	1	21
Minneapolis	11	11	2	0	0	3	2	0	0	0	86
St. Paul	5	7	1	0	0	1	1	0	0	1	44
Iowa:											
Davenport	0	0	0	0			0	1		0	
Des Moines	2	2	2	7			0	0		0	
Sioux City	0	0	0	0			0	0		5	
Waterloo	1	0	0	0			1	0		6	
Missouri:											
Kansas City	2	1	0	0	0	1	3	2	0	13	83
St. Joseph	0	2	0	2	0	0	1	1	0	0	13
St. Louis	5	7	0	0	0	12	8	6	0	35	198
North Dakota:											
Fargo	0	1	0	0	0	0	0	0	0	0	6
Grand Forks	0	1	0	0			0	0		0	
South Dakota:											
Sioux Falls	1	2	0	0			0	0		0	
Nebraska:											
Lincoln	0	1	0	0	0	0	0	4	0	0	11
Omaha	1	1	1	0	0	2	0	1	0	0	57
Kansas.											
Topeka	1	2	0	0	0	0	0	0	0	12	14
Wichita	1	3	0	0	0	2	2	1	1	12	28
SOUTH ATLANTIC											
Delaware:											
Wilmington	1	0	0	0	0	3	1	0	0	0	29
Maryland:											
Baltimore	6	3	0	0	0	15	10	4	1	46	172
Cumberland	0	0	0	0	0	1	1	0	0	0	11
Frederick	0	1	0	0	0	0	0	0	0	0	5

City reports for week ended August 13, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
SOUTH ATLANTIC—continued											
District of Columbia:											
Washington	3	3	1	1	0	9	6	2	0	2	124
Virginia											
Lynchburg	0	0	0	0	0	0	0	0	0	3	11
Norfolk	0	0	0	0	0	0	2	0	0	0	------
Richmond	2	3	0	0	0	4	2	2	0	12	51
Roanoke	1	1	0	0	0	1	1	0	0	0	16
West Virginia.											
Charleston	0	0	0	0	0	0	1	0	1	0	12
Wheeling	1	0	0	0	0	0	1	0	0	0	12
North Carolina.											
Raleigh	0	1	0	0	0	0	1	2	0	3	9
Wilmington	0	0	0	0	0	0	0	0	0	0	9
Winston-Salem	0	2	0	0	0	1	2	1	0	5	20
South Carolina.											
Charleston	0	0	0	0	0	1	2	3	0	0	19
Columbia	0	2	1	0	------	------	2	0	------	4	15
Greenville	0	0	0	0	0	0	1	0	0	2	7
Georgia											
Atlanta	2	1	1	2	0	3	4	4	1	3	42
Brunswick	0	0	0	0	0	1	0	3	0	0	6
Savannah	0	------	0	------	------	------	1	------	------	------	------
Florida·											
Miami	0	0	0	0	0	2	------	0	0	1	33
St Petersburg	0	------	0	------	0	0	0	------	0	------	9
Tampa	0	1	0	0	0	1	1	2	1	0	28
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0	0	0	0	0	0	0	0	0	0	16
Lexington	------	1	------	0	0	0	------	0	0	0	14
Louisville	1	0	1	0	0	3	5	2	0	3	77
Tennessee											
Memphis	1	4	1	0	0	5	7	0	3	1	50
Nashville	1	0	0	0	0	2	7	2	2	3	31
Alabama.											
Birmingham	2	1	1	0	0	4	6	15	2	1	58
Mobile	0	2	0	0	0	1	1	0	0	0	17
Montgomery	0	0	0	0	0	0	1	0	0	0	------
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	0	0	0	0	------	------	1	0	------	2	------
Little Rock	0	0	0	0	0	0	3	1	0	0	------
Louisiana:											
New Orleans	1	6	1	0	0	20	4	13	0	1	145
Shreveport	0	0	0	0	0	1	1	1	0	0	21
Oklahoma:											
Oklahoma City	1	2	1	11	0	2	2	4	0	0	35
Tulsa	------	1	------	0	------	------	------	1	------	1	------
Texas:											
Dallas	0	4	0	0	0	4	3	3	0	1	46
Galveston	0	0	0	0	0	2	0	0	0	0	13
Houston	0	1	0	0	0	7	1	2	1	0	80
San Antonio	0	3	0	0	0	10	2	1	0	0	57
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	0	0	0	0	1	11
Great Falls	1	0	1	0	0	0	0	0	1	0	6
Helena	0	2	0	0	0	0	0	0	0	0	1
Missoula	0	1	0	0	0	0	0	1	0	0	2
Idaho:											
Boise	0	0	1	0	0	0	0	0	0	2	1

City reports for week ended August 13, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
MOUNTAIN—con.											
Colorado:											
Denver	3	4	1	0	0	13	2	0	0	4	73
Pueblo	0	2	0	0	0	1	1	1	0	0	16
New Mexico:											
Albuquerque	0	0	0	0	0	4	0	1	0	0	10
Utah:											
Salt Lake City	1	4	0	1	0	3	1	2	0	11	18
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	6
PACIFIC											
Washington:											
Seattle	3	1	1	0			1	0		8	
Spokane	3	4	2	3			0	0		1	
Tacoma	2	2	1	4	0	0	0	0	0	1	10
Oregon:											
Portland	3	1	5	4	0	4	1	2	0	5	51
California:											
Los Angeles	6	11	4	0	0	23	4	2	0	13	222
Sacramento	1	1	0	2	0	1	2	0	0	0	15
San Francisco	5	5	0	0	0	10	2	2	0	17	133

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Boston	0	0	1	1	0	0	1	12	0
Connecticut:									
Bridgeport	0	0	2	0	0	0	0	1	0
Hartford	1	1	0	0	0	0	1	0	0
MIDDLE ATLANTIC									
New York:									
Buffalo	0	0	0	0	0	0	0	1	0
New York	4	2	5	0	0	0	7	33	2
Rochester	0	0	0	0	0	0	0	1	0
New Jersey:									
Newark	0	0	1	0	0	0	1	2	0
Pennsylvania:									
Philadelphia	0	0	0	0	0	1	1	2	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	0	0	0	0	0	0	0	6	0
Cleveland	0	0	1	0	0	0	1	6	0
Columbus	0	0	1	1	0	0	0	0	0
Illinois:									
Chicago	1	1	1	0	1	1	3	4	1
Michigan:									
Detroit	0	0	1	0	0	0	1	1	0
Wisconsin:									
Milwaukee	2	0	0	0	0	0	0	1	0
Superior	2	0	0	0	0	0	0	0	0

City reports for week ended August 13, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	0	1	0	0	0	0	0	1	0
Iowa:									
Waterloo	0		0		0		0	1	
Missouri:									
Kansas City	1	1	0	0	0	0	0	4	0
St. Louis	1	0	0	0	0	0	1	0	0
Nebraska:									
Omaha	0	0	0	0	0	0	0	1	0
SOUTH ATLANTIC [2]									
Maryland:									
Baltimore	0	0	1	0	0	0	1	0	0
District of Columbia:									
Washington	0	0	0	0	0	0	0	2	0
West Virginia:									
Wheeling	0	0	0	0	0	0	0	8	1
South Carolina:									
Charleston	0	0	0	0	0	1	0	0	0
Greenville	0	0	0	0	0	1	0	1	0
Georgia:									
Atlanta	0	0	0	0	3	0	0	0	0
Florida: [1]									
Miami	0	0	0	0	1	0	1	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Lexington	0	0	0	0	0	0		2	0
Tennessee:									
Nashville	0	0	0	0	0	0	0	1	0
Alabama:									
Mobile [1]	1	1	0	0	0	0	0	0	0
WEST SOUTH CENTRAL									
Louisiana:									
Shreveport	0	0	0	0	0	2	0	0	0
Texas:									
Dallas	0	0	0	2	1	1	0	0	0
Houston	0	0	0	0	0	1	0	0	0
San Antonio	0	0	0	0	0	0	0	1	1
MOUNTAIN									
Utah:									
Salt Lake City	0	0	0	0	0	0	0	0	1
PACIFIC									
Washington:									
Seattle	1		0		0		0	0	
Oregon:									
Portland	6	2	0	0	0	0	0	0	0
California:									
Loss Angeles	0	0	0	0	0	0	1	5	3
Sacramento	0	0	0	0	0	0	0	2	1
San Francisco	0	0	0	1	0	1	0	8	1

[1] Typhus fever: 3 cases at Tampa, Fla., and 1 case at Mobile, Ala.
[2] Anthrax: 1 case at Wilmington, Del.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended August 13, 1927, compared with those for a like period ended August 14, 1926. The population figures used in computing the rates are approximate estimates as of

July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, July 10 to August 13, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927
101 cities	94	114	90	[2] 92	80	[3] 94	78	78	69	[4] 91
New England	78	132	33	63	40	91	40	63	31	70
Middle Atlantic	101	165	109	106	103	104	88	92	62	97
East North Central	110	93	98	108	83	102	104	80	101	94
West North Central	107	54	95	54	85	56	52	42	56	67
South Atlantic	32	83	34	[2] 87	20	89	43	65	48	[5] 83
East South Central	21	36	10	25	21	31	10	31	57	[6] 31
West South Central	26	71	39	126	39	71	39	92	26	[7] 98
Mountain	109	81	64	99	91	117	118	135	73	180
Pacific	158	113	174	65	118	[3] 121	102	76	104	107

MEASLES CASE RATES

	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927
101 cities	226	155	164	[2] 108	108	[3] 58	70	48	59	[4] 27
New England	170	241	108	197	83	169	83	93	68	63
Middle Atlantic	120	122	108	92	63	45	42	43	33	28
East North Central	412	110	279	90	191	47	113	29	84	19
West North Central	192	105	184	48	93	40	58	34	67	22
South Atlantic	201	221	127	[2] 141	111	69	47	38	80	[5] 12
East South Central	171	61	124	25	93	46	41	10	31	[6] 12
West South Central	17	105	13	55	9	59	9	55	4	[7] 4
Mountain	191	171	173	99	128	63	137	45	64	36
Pacific	327	448	212	280	121	[3] 65	121	144	94	60

SCARLET FEVER CASE RATES

	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927
101 cities	94	84	82	[2] 64	73	[3] 63	61	51	51	[4] 57
New England	99	130	85	100	118	107	104	51	68	93
Middle Atlantic	73	91	75	50	52	39	38	36	30	39
East North Central	119	89	89	75	84	87	79	75	55	73
West North Central	186	71	127	79	143	79	101	62	119	75
South Atlantic	45	56	35	[2] 41	34	40	39	27	30	[5] 31
East South Central	52	31	93	31	62	41	31	51	47	[6] 19
West South Central	52	38	82	46	39	25	13	25	21	[7] 63
Mountain	91	225	64	99	36	153	64	126	36	117
Pacific	94	50	91	92	86	[3] 65	83	60	86	63

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.
[2] Norfolk, Va., not included.
[3] Seattle, Wash., and Spokane, Wash., not included.
[4] Winston-Salem, N. C., Savannah, Ga., Memphis, Tenn., and Little Rock, Ark., not included.
[5] Winston-Salem, N. C., and Savannah, Ga., not included.
[6] Memphis, Tenn., not included.
[7] Little Rock, Ark., not included.

Summary of weekly reports from cities, July 10 to August 13, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

SMALLPOX CASE RATES

	Week ended—									
	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927
100 cities	7	9	6	[2] 10	5	[3] 5	8	6	7	[4] 4
New England	0	0	0	0	0	0	0	0	0	0
Middle Atlantic	1	0	0	0	0	0	1	0	0	0
East North Central	6	17	8	13	6	9	9	9	1	5
West North Central	26	14	14	12	4	6	14	0	4	4
South Atlantic	6	9	6	[2] 12	2	4	11	9	11	[5] 6
East South Central	5	25	10	36	21	10	16	5	26	[6] 0
West South Central	13	8	13	8	4	13	13	17	21	[7] 0
Mountain	9	36	27	117	9	27	9	18	73	9
Pacific	21	13	8	21	32	[3] 10	24	21	32	24

TYPHOID FEVER CASE RATES

	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927
101 cities	22	22	18	[2] 20	30	[3] 21	28	25	35	[4] 25
New England	12	19	9	16	14	9	12	7	17	30
Middle Atlantic	11	11	9	8	23	13	19	13	24	15
East North Central	6	8	6	9	10	11	12	9	20	14
West North Central	14	16	12	14	22	16	18	26	24	22
South Atlantic	58	43	47	[2] 50	54	36	65	58	99	[5] 42
East South Central	165	153	134	122	243	117	181	183	140	[6] 117
West South Central	56	75	30	55	47	55	43	50	47	[7] 89
Mountain	0	27	46	27	36	72	27	45	73	36
Pacific	21	8	8	16	11	[3] 24	29	13	29	10

INFLUENZA DEATH RATES

	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927
95 cities	4	3	3	[2] 3	2	3	2	2	1	[4] 3
New England	0	5	2	0	0	2	0	0	0	2
Middle Atlantic	4	2	2	4	1	4	2	1	1	2
East North Central	4	1	4	2	1	1	1	0	0	2
West North Central	0	2	2	2	0	0	0	2	2	6
South Atlantic	6	6	4	[2] 2	2	2	4	6	0	[5] 4
East South Central	21	5	5	15	5	10	0	5	10	[6] 6
West South Central	9	9	9	0	22	9	4	4	13	[7] 14
Mountain	9	18	9	9	0	0	9	9	0	0
Pacific	4	7	4	3	4	3	11	3	0	3

PNEUMONIA DEATH RATES

	July 17, 1926	July 16, 1927	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927
95 cities	60	57	54	[2] 56	48	49	54	47	50	[4] 56
New England	57	56	33	56	33	49	54	33	31	77
Middle Atlantic	74	61	64	59	41	56	56	46	62	57
East North Central	46	45	47	55	47	42	42	44	35	41
West North Central	36	31	40	21	57	17	51	44	25	44
South Atlantic	55	63	57	[2] 75	51	44	68	53	57	76
East South Central	109	66	98	46	62	46	52	51	52	[6] 74
West South Central	79	69	53	65	71	86	97	69	106	[7] 60
Mountain	36	197	64	45	55	36	64	54	82	63
Pacific	46	97	35	72	71	79	57	62	39	55

[2] Norfolk, Va., not included.
[3] Seattle, Wash., and Spokane, Wash., not included.
[4] Winston-Salem, N. C., Savannah, Ga., Memphis, Tenn., and Little Rock, Ark., not included.
[5] Winston-Salem, N. C., and Savannah, Ga., not included.
[6] Memphis, Tenn., not included.
[7] Little Rock, Ark., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

THE FAR EAST

Reports for weeks ended July 30 and August 6, 1927.—The following reports for the weeks ended July 30 and August 6, 1927, were transmitted by the eastern bureau of the health section of the secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Week ended July 30, 1927

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Kenya: Mombasa	1	0	0	0	0	0
Iraq: Basra	0	0	29	18	5	3
Persia:						
Mohammerah	0	0	52	37	0	0
Abadan	0	0	122	103	0	0
British India:						
Bombay	----	4	----	25	14	6
Madras	----	0	----	105	3	1
Calcutta	----	0	----	12	9	7
Bassein	----	4	----	0	0	0
Rangoon	----	9	----	1	13	6
Vizagapatam	----	0	----	0	4	1
Negapatam	----	0	----	0	2	2

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Siam: Bangkok	0	0	0	1	0	0
Dutch East Indies: Banjermasin	0	0	0	0	7	0
French Indo-China: Haiphong	0	0	8	8	0	0
Macao	0	0	1	1	0	0
Hong Kong	0	0	0	0	1	1
Manchuria: Changchun	0	0	0	0	1	0
Japan: Nagasaki	0	0	0	0	3	0

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Arabia.—Jeddah.

Persia.—Bender-Abbas, Bushire, Lingah.

Ceylon.—Colombo.

British India.—Karachi, Chittagong, Cochin, Tuticorin, Moulmein.

Portuguese India.—Nova Goa.

Federated Malay States.—Port Swettenham.

Straits Settlements.—Singapore, Penang.

Dutch East Indies.—Batavia, Banjermasin, Pontianak, Semarang, Menado, Cheribon, Makassar, Balikpapan, Padang, Belawan-Deli, Tarakan, Sabang, Palembang.

Sarawak.—Kuching.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

Portuguese Timor.—Dilly.

Philippine Islands.—Manila, Iloilo, Jolo, Cebu, Zamboanga.

French Indo-China.—Saigon and Cholon, Tourane.

China.—Amoy, Shanghai, Tientsin, Tsingtao, Canton.

Formosa.—Keelung, Takao.

Chosen.—Chemulpo, Fusan.

Manchuria.—Yingkow, Antung, Harbin, Mukden.

Kwantung.—Port Arthur, Dairen.

Japan.—Yokohama, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns.

AUSTRALASIA AND OCEANIA—continued

New Guinea.—Port Moresby.

New Britain Mandated Territory.—Rabaul and Kokopo.

New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.

Samoa.—Apia.

New Caledonia.—Noumea.

Fiji.—Suva.

Hawaii.—Honolulu.

Society Islands.—Papeete.

AFRICA

Egypt.—Alexandria, Suez, Port Said.

Anglo-Egyptian Sudan.—Port Sudan, Suakin.

Eritrea.—Massaua.

French Somaliland.—Djibouti.

British Somaliland.—Berbera.

Italian Somaliland.—Mogadiscio.

Zanzibar.—Zanzibar.

Tanganyika.—Dar-es-Salaam.

Seychelles.—Victoria.

Portuguese East Africa.—Mozambique, Beira, Lourenco-Marques.

Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.

Reunion.—Saint Denis.

Mauritius.—Port Louis.

Madagascar.—Majunga, Tamatave, Diego-Suarez.

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from—

Arabia.—Aden, Kamaran, Perim.
Dutch East Indies.—Surabaya, Samarinda, Padang, Sabang, Pontianak.
Union of Socialistic Soviet Republics.—Vladivostok.

Belated information—

Week ended July 23: *Canton,* cholera 4 cases, 2 deaths.

Other epidemiological information:

The *Sanitary Maritime and Quarantine Council of Egypt* reports that, during the week ended Wednesday, August 3, 2,284 pilgrims arrived at El Tor from Yambo. No infectious disease occurred.

Week ended August 6, 1927

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Iraq: Basra	0	0	48	35	0	0
Persia:						
Mohammerah	0	0	34	26	0	0
Abadan	0	0	66	58	0	0
Ahwaz	0	0	12	6	0	0
British India:						
Karachi	....	0	....	0	1	1
Bombay	....	3	....	14	9	7
Madras	....	0	....	02	3	1
Calcutta	....	0	....	8	11	10
Bassein	....	4	....	0	0	0
Rangoon	....	5	....	0	5	1
Ceylon: Colombo	0	0	0	0	1	1
Dutch East Indies:						
Banjermasin	0	0	0	0	44	....
Menado	0	0	0	0	2	....
French Indo-China						
Haiphong	0	0	6	6	0	0
Turane	0	0	6	5	0	0
China						
Shanghai	0	0	....	3	0	0
Canton	0	0	10	8	1	1
Japan: Nagasaki	0	0	0	0	1	0

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Arabia.—Jeddah, Aden, Perim.

Persia.—Bender-Abbas, Bushire, Lingah.

British India.—Negapatam, Chittagong, Cochin, Tuticorin, Vizagapatam, Moulmein.

Portuguese India.—Nova Goa.

Federated Malay States.—Port Swettenham.

Straits Settlements.—Singapore, Penang.

Siam.—Bangkok.

Dutch East Indies.—Batavia, Surabaya, Pontianak, Semarang, Cheribon, Makassar, Balikpapan, Padang, Belawan-Deli, Tarakan, Sabang, Palembang, Samarinda.

Sarawak.—Kuching.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

Portuguese Timor.—Dilly.

Philippine Islands.—Manila, Iloilo, Jolo, Cebu, Zamboanga.

French Indo-China.—Saigon and Cholon.

China.—Amoy, Tientsin, Tsingtao.

Hong Kong.

Macao.

Formosa.—Keelung, Takao.

Chosen.—Chemulpo, Fusan.

Manchuria.—Yingkow, Antung, Harbin, Mukden, Changchun.

Kwantung.—Port Arthur, Dairen.

Japan.—Yokohama, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns.

AUSTRALASIA AND OCEANIA—continued

New Guinea.—Port Moresby.

New Britain Mandated Territory.—Rabaul and Kokopo.

New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.

Samoa.—Apia.

New Caledonia.—Noumea.

Fiji.—Suva.

Hawaii.—Honolulu.

Society Islands.—Papeete.

AFRICA

Egypt.—Alexandria, Suez, Port Said, El Tor.

Anglo-Egyptian Sudan.—Port Sudan, Suakin.

Eritrea.—Massaua.

French Somaliland.—Djibouti.

British Somaliland.—Berbera.

Italian Somaliland.—Mogadiscio.

Kenya.—Mombasa.

Zanzibar.—Zanzibar.

Tanganyika.—Dar-es-Salaam.

Seychelles.—Victoria.

Portuguese East Africa.—Mozambique, Beira, Lourenco-Marques.

Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.

Reunion.—Saint Denis.

Mauritius.—Port Louis.

Madagascar.—Majunga, Tamatave, Diego-Suarez.

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from—

Arabia.—Kamaran.

Union of Socialist Soviet Republics.—Vladivostok.

Belated information:

Week ended July 23: Karikal, cholera, 3 cases, 3 deaths. Manila, cholera, 1 case.

Week ended July 30: Surabaya, smallpox, 1 case. Pontianak, Sabang, Padang, nil.

Movement of infected ships:

Yokohama.—The British passenger steamer *Adrastus* arrived from China on August 1 infected with cholera.

Singapore.—A British sailing ship arrived from Labuan on August 8 infected with smallpox.

CANADA

Communicable diseases—Two weeks ended August 13, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases in seven Provinces of Canada for the two weeks ended August 13, 1927, as follows:

Week ended August 6, 1927

Disease	Nova Scotia	New Brunswick	Quebec	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever			2	1			3
Influenza	2						2
Lethargic encephalitis					1		1
Smallpox				4	1	5	10
Typhoid fever	1	4	22		1		28

Week ended August 13, 1927

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever			1		1			2
Poliomyelitis				1				1
Smallpox				18		1	4	23
Typhoid fever		6	25	72	6	3	1	113

Typhoid fever—Montreal—January 2–August 20, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	May 7, 1927	106	19
Jan. 15, 1927	4	3	May 14, 1927	367	16
Jan. 22, 1927	1	2	May 21, 1927	770	26
Jan. 29, 1927	3	1	May 28, 1927	353	38
Feb. 5, 1927	1	0	June 4, 1927	239	37
Feb. 12, 1927	0	0	June 11, 1927	128	36
Feb. 19, 1927	1	2	June 18, 1927	86	
Feb. 26, 1927	1	1	June 25, 1927	75	23
Mar. 5, 1927	9	1	July 2, 1927	66	21
Mar. 12, 1927	203	4	July 9, 1927	52	10
Mar. 19, 1927	383	14	July 16, 1927	39	4
Mar. 26, 1927	568	22	July 23, 1927	22	9
Apr. 2, 1927	649	48	July 30, 1927	23	10
Apr. 9, 1927	386	40	Aug. 6, 1927	16	5
Apr. 16, 1927	175	38	Aug. 13, 1927	20	5
Apr. 23, 1927	125	43	Aug. 20, 1927	14	
Apr. 30, 1927	105	23			

EGYPT

Communicable diseases—Two weeks ended July 15, 1927.—During the two weeks ended July 15, 1927, communicable diseases were reported in Egypt as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Influenza	67		Typhoid fever	197	
Smallpox	3	2	Typhus fever	16	1

NEW ZEALAND

Communicable diseases—June 14–July 18, 1927.—The director general of health for New Zealand reports communicable diseases for the period June 14 to July 18, 1927, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Cerebrospinal meningitis	4		Poliomyelitis	4	2
Diphtheria	197	11	Puerperal fever	35	1
Erysipelas	30	3	Scarlet fever	262	2
Influenza	18	5	Tetanus	1	1
Lethargic encephalitis	1		Trachoma	1	
Ophthalmia neonatorum	2		Tuberculosis	128	58
Pneumonia	124	25	Typhoid fever	36	2

PERSIA

Cholera—July 19–31, 1927.—The Persian Ministry of Foreign Affairs reports the spread of cholera to Nasseri. During the period July 19 to 31, 1927, there were reported 166 deaths at Abadan, 61 deaths at Mahammareh, and 10 deaths at Nasseri. All necessary preventive measures have been taken.

SENEGAL

Plague—Yellow fever—July 25–31, 1927.—During the week ended July 31, 1927, plague was reported in Senegal, West Africa, as follows: Baol—Cases, 18; deaths, 9. In the Cayor—Cases, 43; deaths, 26. Dakar—Cases, 28; deaths, 18. Rufisque—38 cases and 28 deaths. Thies—One case.

During the same period two fatal cases of yellow fever were reported at Khombole and Bambey. At Ouakam, a suburb of Dakar, 2 cases of yellow fever occurred.

UNION OF SOUTH AFRICA

Plague in rodents.—The carcass of a white-tailed rat (*Mystromys albicaudatus*) found on the veld in the Municipality of Roodepoort on June 23, 1927, and sent to the Institute for Medical Research, showed, on examination, appearances suggestive of plague, but a definite diagnosis could not be made on the microscopic appearances only. Animal inoculations were made and it was established that

the rodent was plague infected. This occurrence emphasizes the danger of infection spreading to the domestic rodents of the Rand area.

On July 4, 1927, two decomposed carcasses of Peba gerbilles were found on the farm Mimosa, some 33 miles northeast from Klaver, 18 miles from the village of Van Rhynsdorp, and 4 miles west of the Bokkeveld Mountains. Materials from these carcasses were found (on laboratory examination) to show plague organisms. This discovery indicates that plague infection in veld rodents has recently extended some distance westward, and has passed the mountain barrier between the Calvinia plateau and the coastal belt.

These are said to be the first instances in which specimens of these two varieties of veld rodent—the white-tailed rat and Peba gerbille—have been found plague infected.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended September 2, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China				
Canton	July 10-16	3	2	
Swatow	July 10-16	30		
India	June 19-July 2			Cases, 20,128; deaths, 12,142.
Bombay	June 25-July 2	5	2	
Indo-China:				
Saigon	July 1-7	2	1	Including Cholon.
Iraq:				
Basra	Reported July 25	9	7	
Persia.				
Abadan	July 19-31		166	
Mohammareh	do		61	
Nasseri	do		10	
Siam	June 26-July 9	22	13	
Bangkok	do	2		

PLAGUE

Place	Date	Cases	Deaths	Remarks
Argentina:				
Merou	Reported July 14			Present.
Azores:				
St. Michaels Island	July 24-30	1		6 miles from port.
China				
Amoy	July 3-16			Present in surrounding country.
Greece:				
Athens	Reported Aug. 6	1		
Patras	July 31-Aug. 6	1	1	
Mitylenes	Aug. 9	1		
Hawaii Territory:				
Paauilo	July 26-Aug. 1		4	
India	June 19-July 2	239	149	
Madras	July 10-16	47	29	
Java:				
Batavia	June 26-July 9	38	38	Province.
Senegal:				
Baol	July 25-31	18	9	
Cayor	do	43	26	
Dakar	do	28	18	
Rufisque	do	38	28	
Thies	do	1		
Tunisia:				
Tunis	July 25-Aug. 1	1		

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended September 2, 1927—Continued

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Arabia:				
Aden	July 17-Aug. 1	2	1	Imported.
British South Africa:				
Northern Rhodesia	July 2-15	46	2	
Canada	July 31-Aug. 13			Cases, 33.
Alberta	do	9		
Manitoba	do	4		
Winnipeg	Aug. 14-20	2		
Ontario	do	18		
Ottawa	Aug. 14-20	18		
Sarnia	Aug. 7-13	1		
Saskatchewan	July 31-Aug. 13	2		
Moosejaw	Aug. 7-13	5		
China:				
Amoy	July 3-16			Present in surrounding country.
Antung	July 18-31	2		
Manchuria—				
Dairen	June 19-26	2		
Harbin	June 27-July 10	2		
Tientsin	July 10-16	4		
Egypt	July 9-15	2		
Cairo	Mar. 11-Apr. 1	4	1	
Great Britain:				
England and Wales	July 31-Aug. 6	172		
Newcastle-on-Tyne	do	1		
India	June 19-July 2			Cases, 8,319; deaths, 2,418.
Bombay	June 26-July 2	28	18	
Madras	July 9-16	1		
Iraq:				
Basra	July 10-16	1	1	
Japan:				
Nagasaki	July 24-31	3		
Mexico:				
San Luis Potosi	Aug. 7-13		1	
Tampico	July 21-31		1	
Torreon	Aug. 7-13		1	
Poland	June 12-25	5	1	
Siam	June 26-July 9			Cases, 33, deaths, 5.
Bangkok	June 26-July 16	4	1	
Union of South Africa:				
Cape Province—				
Idutywa District	July 3-9			Outbreaks.

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	July 21-31	1		
Bulgaria:				
Sofia	July 30-Aug. 5	1		
China:				
Tientsin	July 10-16	1		
Egypt	July 2-15	16	1	
Alexandria	July 20-29	1		
Cairo	Feb. 26-Apr. 1	19	4	
Mexico:				
Mexico City	July 31-Aug. 6	3		
Poland	July 12-25	85	11	
Union of South Africa:				
Cape Province	July 3-9			Outbreaks.
Natal	do			Do.
Transvaal—				
Johannesburg	July 3-16	18	5	

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Senegal	July 25-31	2	2	In interior.
Dakar	Aug 8	2	2	Europeans.
Ouakam	do	2		Suspects.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to August 26, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-28	1	1	
Canton	May 1-July 9	9	3	
Kulangsu	June 21	1		
Shanghai	June 19-25	2		
Do	Reported Aug. 19			Present.
Swatow	May 15-July 9	36	12	
India	Apr. 17-June 18			Cases, 59,445; deaths, 34,933.
Bombay	May 8-June 14	2	1	
Calcutta	May 8-June 18	396	247	
Karachi	May 29-June 4	1	1	
Madras	June 19-25	5	3	
Rangoon	May 8-June 25	15	11	
India, French Settlements in	Mar 30-June 30	10	3	
Indo-China (French)	Apr 1-June 20			Cases, 8,998.
Annam	do	1,147		
Cambodge	do	197		
Cochin-China	do	1,049		
Saigon	June 4-10	4	3	
Tonkin	Apr 1-June 30	6,605		
Iraq:				
Basra	Reported Aug. 2			Present.
Philippine Islands:				
Bulacan Province	June 7-July 8	2	1	
Leyte Province—				
Barugo	June 29	1	1	
Carigara	June 23	1	1	Final diagnosis not received.
Palo	May 18	1		
Siam	May 1-June 25			Cases, 159; deaths 85.
Bangkok	do	36	12	
On vessel				
Steamship Adrastus	Reported Aug. 6	1	1	At Yokohama, Japan.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Argentina	Jan. 1-June 30			Cases, 71; deaths, 44.
Buenos Aires	Apr. 10-May 7	4	3	
Cordoba	Jan. 11-Mar. 23	50	29	
Corrientes	June 1	1	1	
Entre Rios	Mar. 29-Aug 1	3	1	
Santa Fe	Apr. 28-May 16	4	3	
Territory—				
Chaco—				
Barranqueras	May 29	2	2	
Formosa	June 25	3	2	
Pampa	Reported July 6	2		
City—				
Rosario	May 7	1	1	
Santa Fe	May 16	4	2	
Azores				
Ribeira Grande	June 12-18			9 miles from port.
St. Michaels Island	May 15-June 3	2		
British East Africa:				
Kenya	Apr. 24-June 11	18	14	
Nairobi	May 22-28	6		
Tanganyika	Mar. 20-May 28		37	
Uganda	Jan. 1-Feb. 28	138	121	
Do	Mar 27-June 11	266	207	
Canary Islands:				
Laguna District—				
Tejina	June 17	1		
Ceylon:				
Colombo	May 1-July 2	17	11	Plague rats, 4.
Ecuador:				
Guayaquil	June 1-30			Rats taken, 25,069; found infected, 28.
Egypt	May 21-July 8			Cases, 7; deaths, 2.
Alexandria	June 4-10	1		
Biba	do	1		At Nana.
Beni-Souef	June 4-July 13	5	2	
Dakhalia	June 24-July 9	6	1	
Port Said	June 24-July 21	4	1	
Tanta District	June 4-10	1		

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to August 26, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Greece	May 1-31	1	1	
Athens	June 1-30	1		Including Piraeus
Patras	May 30-Aug. 5	5		
Hawaii Territory				
Hamakua	July 15			1 plague rodent.
Honokaa	May 17-23	2	2	
India	Apr. 17-June 18			Cases, 21,345, deaths, 8,017.
Bombay	May 8-June 25	71	63	
Madras	May 1-June 18	119	50	
Rangoon	May 8-July 2	27	24	
Indo-China (French)	Apr. 1-June 20	21		
Kwang-Chow-Wan	May 21-June 10	57		
Iraq				
Baghdad	Apr. 8-May 28	12	1	
Java:				
Batavia	May 1-June 25	120	121	Province.
East Java and Madura	May 22-June 18	23	23	
Pasoeroean Residency	May 9			Outbreak reported at Nagdiwono.
Surabaya	Apr 17-May 7	24	24	
Madagascar				Mar. 16-Apr. 30, 1927: Cases, 256; deaths, 135
Province—				
Ambositra	Mar. 16-June 15	73	67	
Antsirabe	Mar. 16-May 15	8	8	
Miarinarivo (Itasy)	Mar 16-May 31	45	45	
Moramanga	May 16-June 15	20	19	
Tananarive	Mar. 16-May 31	196	170	
Tananarive Town	do	22	20	
Peru	Apr.-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	do	13	4	
Lima City	Apr. 1-30	5	1	
Senegal	May 23-July 17			Cases, 442: deaths, 259.
Baol	June 2-July 24	27	14	
Cayor Frontier	July 4-24	83	48	
Dakar	June 20-July 24	52	32	
Fecel	July 6	17	8	
Guindel	June 20-26	11	2	
M'Bour	July 6-10	28	23	
Medina	June 13-19	2	2	
Pout	July 4-10	1		
Rufisque	May 23-July 24	125	89	
Thies District	do	26	9	
Tivaouane	June 2-July 17	50	32	
Siam	Apr 1-June 25			Cases, 10; deaths, 7.
Bangkok	May 8-June 11	2	1	
Tunisia	Apr. 21-May 31	131		
Turkey.				
Constantinople	May 13-19	1		
Union of South Africa:				
Cape Province—				
Maraisburg District	May 1-14	2	2	Native.
On vessel:				
S. S. Averoff	June 24-30	1		On Greek war ship at port of Athens.
Steamship Ransholm	Aug. 5	3		At Gefle, Sweden, from Rufisque, Senegal.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-June 10			Cases, 333.
Algiers	May 11-June 30	8		
Oran	May 21-July 31	38		
Brazil:				
Rio de Janeiro	May 22-July 29	7	8	
British East Africa:				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 29-May 7		22	
Zanzibar	Apr. 1-30	7	2	
British South Africa:				
Northern Rhodesia	Apr. 30-June 24	58		Native.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to August 26, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Canada	June 5-July 30			Cases, 290.
Alberta	June 12-July 30			Cases, 76.
Calgary	June 12-Aug. 6	8		
British Columbia—				
Vancouver	May 23-29	2		
Manitoba	June 5-July 30			Cases, 16.
Winnipeg	June 12-Aug 6	13		
Ontario	June 5-July 30			Cases, 151.
Ottawa	June 12-Aug. 13	73		
Toronto	June 19-July 23	9		
Quebec	do	13		
Saskatchewan	June 12-July 30			Cases, 41.
Regina	July 17-Aug. 6	3		
Ceylon	May 1-7			Cases, 3; deaths, 1.
China:				
Amoy	May 8-28	1		
Antung	July 4-10	1		
Chefoo	May 8-14			Present.
Foochow	May 8-June 11			Do.
Hong Kong	May 8-July 9	17	16	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-July 9	7		
Dairen	May 2-June 12	7	5	
Fushun	May 15-June 5	9		
Harbin	June 13-26	2		
Kai-Yuan	July 3-9	2		
Mukden	May 22-July 9	5		
Penshu	July 3-9	1		
Ssupingkai	May 8-July 9	3		
Tientsin	do	13		
Chosen	Feb. 1-Apr 30			Cases, 154, deaths, 84.
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr 1-30	1		
Curacao	May 29-June 4	1		Alastrim.
Ecuador:				
Guayaquil	June 1-30	2		
Egypt	May 7-June 17			Cases, 17; deaths, 3.
Alexandria	May 21-June 17	4	1	
Cairo	Jan. 22-Feb. 25	7	1	
France	Apr. 1-May 31			Cases, 128.
Paris	May 21-June 30	11	2	
Gold Coast	Mar. 1-Apr. 30	22	4	
Great Britain				
England and Wales	May 22-July 30			Cases, 2,190.
Bradford	May 29-June 11	2		
Cardiff	June 19-July 2	4		
Leeds	July 17-30	2		
Liverpool	do	1		
London	May 15-June 18	2		
Newcastle on Tyne	June 12-July 30	3		
Sheffield	June 12-July 23	23		
Scotland—				
Dundee	May 29-July 2	5		
Greece:				
Saloniki	July 12-18		1	
Guatemala				
Guatemala City	June 1-30		9	
Guinea (French)	June 4-10	9		
India	Apr 17-June 18			Cases, 49,028; deaths, 12,448.
Bombay	May 28-June 25	136	92	
Calcutta	May 8-June 18	270	206	
Karachi	May 15-June 25	8	5	
Madras	May 22-July 2	14	5	
Rangoon	May 8-July 2	132	41	
India, French Settlements in	Mar. 20-May 21	145	88	
Indo-China (French)	Mar. 21-June 10			Cases, 236.
Saigon	May 14-20	1	1	
Iraq:				
Baghdad	Apr. 10-16	2		
Basra	do	1		
Italy	Apr. 10-May 21	13		
Jamaica	May 29-July 30	24		Reported as alastrim.
Japan	Apr. 3-May 7			Cases, 19.
Nagasaki City	June 20-July 24	21	6	
Taiwan Island	May 21-31	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to August 26, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Java.				
Batavia	May 22-28	1		
East Java and Madura	Apr 24-30	1		
Latvia	Apr. 1-30	1		
Mexico				
Durango	June 1-30		1	
La Oroya	Apr. 1-June 30			Present.
San Luis Potosi	May 29-Aug 6		10	
Tampico	June 1-10	1	1	
Morocco	Apr 1-May 31	94		
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in two localities.
Pasir Residency	Apr. 30-May 6			Epidemic outbreak.
Samarinda Residency	May 21-27			Do.
Nigeria	Mar. 1-Apr. 30	1,560	351	
Persia:				
Teheran	Feb. 21-Apr. 20		5	
Poland	Apr. 19-May 28	7		
Portugal:				
Lisbon	May 29-July 23	14	1	
Senegal:				
Medina	July 4-10	7		
Siam	May 1-June 25			Cases, 60; deaths, 14.
Bangkok	May 15-June 25	7	3	
Spain				
Valencia	May 29-June 4	2		
Straits Settlements	June 12-18			Cases, 3.
Singapore	Apr. 1-May 28	4	2	
Sumatra:				
Medan	June 5-11	2		
Switzerland:				
Berne	June 26-July 2	1		
Tunisia	Apr 1-June 10			Cases, 10.
Tunis	June 1-10	1		
Union of South Africa:				
Cape Province—				
Elliott District	May 11-June 10			Outbreaks.
Kalanga District	do			Do
Transvaal—				
Barberton District	May 1-7			Do.

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr 21-June 10			Cases, 263, deaths, 29.
Algiers	May 11-July 20	25		
Oran	May 21-July 31	32		
Bulgaria	Mar 1-May 10			Cases, 151; deaths, 14.
Sofia	June 4-10	1		
Chile:				
Antofagasta	Apr 16-May 31	1		
Concepcion	May 29-June 4		1	
La Calera	Apr. 16-May 31	1		
Ligua	Mar 16-31	2		
Puerto Montt	Apr. 16-May 31	1		
Santiago	do	5	1	
Talcahuano	July 10-16		1	
Valparaiso	Apr. 16-July 16	4		
China:				
Manchuria—				
Mukden	May 29-June 4	1		
Chosen	Feb. 1-Apr. 30			Cases, 330, deaths, 30.
Chemulpo	May 1-June 30	15	1	
Gensan	do	2		
Seoul	Apr. 1-June 30	30	2	
Czechoslovakia				Apr. 1-30, 1927: Cases, 21.
Egypt	May 28-June 24			Cases, 96; deaths, 17.
Alexandria	May 21-July 15	10	3	
Cairo	Jan. 15-Feb. 25	3	1	
Estonia	Apr. 1-30			Case, 1.
Greece:				
Athens	June 1-30		9	
Iraq:				
Baghdad	Apr. 24-30	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to August 26, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Irish Free State:				
Cork County	July 3-9	1		In urban district.
Latvia	Apr. 1-May 31	17		
Lithuania	Feb. 1-Apr. 30	121	17	
Mexico	Feb. 1-28			Deaths, 26
Mexico City	May 29-July 30	23		Including municipalities in Federal District.
San Luis Potosi	July 31-Aug 6		1	
Morocco	Apr. 1-June 10	328		
Palestine	May 24-June 6			Cases, 3.
Haifa	do.	2		
Mahnaim	May 17-23	1		In Safad district.
Safad	May 17-June 20	3		
Peru:				
Arequipa	Apr 1-30		1	
Poland	Apr. 10-June 11	869	85	
Portugal:				
Lisbon	May 29-June 4	1		
Rumania	Apr. 3-May 14	687	47	
Tunisia	Apr 22-June 10			Cases, 137.
Tunis	July 5-11	1		
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa	Apr 1-30			Cases, 55; deaths, 8, native. In Europeans, cases, 2.
Cape Province	Apr 1-June 18	42	5	
Albany	June 5-11			Outbreaks.
East London	May 22-28	1		Do.
Glen Grey District	May 1-7			Do.
Kentani	June 26-July 2			Do.
Qumbu District	May 1-7			Do.
Umzimkulu District	June 26-July 2			Do.
Natal	Apr. 1-June 18	7	3	
Impendhle District	June 5-11			Do.
Orange Free State	Apr. 1-May 28	5		
Transvaal	Apr. 1-30	1		
Yugoslavia	May 1-31			Cases, 4.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Dahomey (West Africa):				
Porto Novo	July 1	1	1	In Syrian woman.
Gold Coast	Apr. 1-30	8	5	
Liberia:				
Monrovia	May 29-July 8	4	5	
Senegal	May 27			Cases, 3.
Dakar	July 9	1		
M'[illegible]	May 27-June 19	5	5	
Oua[illegible]	June 2-8	1	1	
Thies	July 10	1	1	In European.
Tiv[illegible]	May 27-June 8	5	5	

TREASURY DEPARTMENT

PUBLIC HEALTH REPORTS

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SEPTEMBER 9 - 1927

SPECIAL ARTICLES

Preventive Medicine in Private Practice

Directory of City Health Officers, 1927

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON
1927

UNITED STATES PUBLIC HEALTH SERVICE

HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

Asst Surg Gen. C C PIERCE, *Chief of Division*

The PUBLIC HEALTH REPORTS are issued weekly by the United States Public Health Service through its Division of Sanitary Reports and Statistics, pursuant to acts of Congress approved February 15, 1893, and August 14, 1912

They contain: (1) Current information of the prevalence and geographic distribution of preventable diseases in the United States in so far as data are obtainable, and of cholera, plague, smallpox, typhus fever, yellow fever, and other communicable diseases throughout the world. (2) Articles relating to the cause, prevention, or control of disease. (3) Other pertinent information regarding sanitation and the conservation of the public health.

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PUBLIC HEALTH REPORTS

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THE UNEXPLORED FIELD OF PREVENTIVE MEDICINE IN PRIVATE PRACTICE[1]

By W. F. Draper, *Assistant Surgeon General, United States Public Health Service*

The United States Public Health Service is a medical organization. Its commissioned corps is composed entirely of doctors of medicine recruited from the ranks of the general profession. Its paramount duty may be said to be the conservation and improvement of the health of the inhabitants of this country, to the extent that the powers and facilities conferred and afforded by Congress make this possible. In performing this duty this Service makes use of medical knowledge, the heritage of the centuries of patient and careful observation and experiment which our professional forebears have handed down to us and which we are all endeavoring to perfect and expand. I have made these statements to emphasize the fact that in appearing before this section as a representative of the Public Health Service I come as a medical man representing a medical body—one which shares the traditions, the training, the aspirations and, it must be confessed, the difficulties of the medical profession.

The point of view is different, but similar. The Public Health Service sees a sick nation and seeks to cure it; the practitioner sees a sick patient and endeavors to cure him. The difference of approach lies in the difference in material. When a sick person applies to a physician for treatment there may appear but little to do with regard to that particular patient and his immediate illness except to try to restore him to health. A sick nation, however, is made up of millions of persons only a proportion of whom are at any one time in the ordinary sense sick, but the rest of whom are constantly exposed to the danger of becoming ill. The national problem therefore includes not only the restoration of the sick to health, but also the prevention of disease among those who at the time may be healthy.

The first part of this program has been left largely and wisely to the private practitioner. The sick person is an individual and

[1] Chairman's address, read before the Section on Preventive and Industrial Medicine and Public Health at the Seventy-eighth Annual Session of the American Medical Association, Washington, D. C., May 18, 1927, and printed in the Journal, vol. 89, No. 7, August 13, 1927, pp. 492–493.

requires individual treatment. The preventive part of the program, however, has been assumed to a great extent in this country by public health agencies for two principal reasons: First, that the general practitioner in America has not been trained to think and act in terms of preventive medicine; and, second, that many of the necessary measures can be applied only by the concerted action brought by a central official organization.

Public health organizations owe their origin to the medical profession. To it also they owe a large part of the scientific information on which they base their methods. To the observations and reports of medical men in practice they are constantly indebted for knowledge of the occurrence, the prevalence, and the nature of the diseases which they attempt to combat; but, unfortunately, such is the tradition, the custom, the accepted mechanism of health practice in this country that only to a slight extent have they utilized or attempted to make use of the enormous potential power of the practicing element of the medical profession in the cause of preventive medicine.

It must be acknowledged that public health agencies can clearly foresee limitations to what can be accomplished by concerted action through official agencies. The limits have by no means been reached, but there is no good reason for delaying the application of any potential help which would not introduce conflicting elements. And it would appear that, if the 150,000 physicians in practice in this country could be enlisted in a serious effort to improve and conserve the health of the millions of patients and the families of patients with whom they come in contact, a tremendous impetus could be given to the cause of preventive medicine. It would seem as if under these circumstances we should hold preventable disease, as it were, between two millstones; the one breaking up the large lumps or masses, the other grinding away at the individual particles.

We are all aware that some not insignificant attempts have been made by members and by associations of the medical profession to increase the interest of practicing physicians in the prevention of disease as distinguished from its cure. Some of these attempts have unfortunately been associated with other projects about which considerable controversy has arisen. I need only mention a few topics to indicate what is meant. Such captions as "state medicine," "contract practice," and "life extension" can hardly be mentioned without arousing various and conflicting emotions in the minds of a medical audience. And yet with each of the movements represented by these captions some element of disease prevention by practicing physicians has been associated. My address has nothing to do with a discussion of these factors. The opportunities for preventive work to which I would call attention are not

necessarily associated with any movement, organization, or development affecting the profession. They concern the individual practitioner alone, and I speak as one physician to another.

I have mentioned that limitations to what can be accomplished by official mass health work are in sight. There is still much to do in the extension and consolidation of current useful activity, and doubtless new methods will develop as time goes on; but always there will remain the fact that the collective health status of the Nation will depend to a very considerable extent on what the individual citizen does as regards his own health and that of his children. Extensive attempts have been made by health organizations to excite the interest of the citizen in the protection of his health. All the ingenious machinery of the leaflet, the poster, the illustrated lecture, the health exhibit, and the radio broadcast have been utilized. The visiting health nurse and the consultation clinic are familiar illustrations of the organized attempt to bring information to the public. But it would appear that what would seem *a priori* to be the most fruitful source of advice in matters of personal and domestic hygiene had, in general, been deplorably neglected.

The doctor of medicine, while dealing with an art which may be criticized by mathematicians as inexact, nevertheless has devoted much of the time of his training period to fundamental natural sciences and is accustomed to think in terms of biology, chemistry, and physics. He is also, next to the priest, the man of all men who comes most intimately into the confidence of the people. Unfortunately for the present purpose, he has been trained to think more about disease than about health; but there is no more adaptable person in all the world than the physician, and if he can be persuaded of its desirability he can soon learn to enlarge his point of view.

It may justly be inquired what incentives there are which would induce physicians to expand their point of view and become more interested and more active in the prevention of disease. There are several which readily occur to me, and doubtless others exist. The most important incentive is the opportunity for service to humanity. This appeal has never been made to physicians in vain. The second incentive which may be mentioned is the fair promise of increasing remuneration. It is believed that a false sense of delicacy and false interpretation of ethics is what has stood in the way of developments along this line rather than the unwillingness of patients to pay for advice in advance of actual illness. The third item which I will mention is hardly so much an incentive as a compulsion. If I read the signs of the times aright, the time is not far distant when the public is going to demand protective advice from the physician. The time is coming, I think, when a physician will be severely criticized for

failure to offer advice on hygienic matters when he has had a chance to make the necessary observations. His reply that he was employed to treat a case of rheumatism, not to criticize the family diet, will come to be considered inadequate.

These observations may appear visionary or chimerical. In support of their soundness I submit the evidence that in other countries, further developed along these lines than we are, simply because they have had longer experience, the state of things which I have sketched is already the accepted order. In some instances it goes even further. The official health organization still has important functions, but the bulk of the health work is done by the practicing physician, who is held morally and often legally responsible for its proper performance. I am not arguing for an increased intimacy of official relationship between the physician and the Government. I very seriously doubt its desirability. I merely wish to invite attention to a great service to humanity which the profession can perform, and which it seems probable that it will be called on to extend before many years have passed.

The time assigned permits me to discuss but briefly two important additional questions in connection with my subject. First, Is the medical profession equipped at the present time to offer sound, dependable, and consistent advice on all the questions of domestic and personal hygiene which may be propounded by those seeking advice? Frankly, I do not see how it can be, or could be expected to be. Little attention has been paid to this aspect of medicine in the colleges up to within the most recent years, and hardly anywhere at the present time can the formal instruction in a purely medical course be described as fully adequate. Nevertheless, there are many sources of reliable information, and, as has been said, the physician is an adaptable person; a physician who can no longer learn is of dubious value to the public in any medical capacity. Many physicians, of course, are already fully equipped to take up this work, and have themselves made some of the most valuable contributions to preventive medicine.

The second question is, What would be the scope of the activities contemplated? There seems to be no good reason for limiting this so long as it can be kept within the subject matter on which a physician can be expected to speak with authority and out of the field which is strictly the province of public-health authority. It would be proper, I should think, for the family physician to examine into the sanitary condition of the home itself, and to call attention to obvious health hazards intrinsic therein, as well as to become familiar with the physical and mental status and habits of the members of the family. On the other hand, questions dealt with by local sanitary law should be referred to the health authorities.

The Public Health Service has felt so strongly that an immense power for good was not being adequately utilized that it is very desirous of helping along a process of evolution which, although much hindered and delayed, appears to be ultimately inevitable. It has considered whether the publication of a "check list of opportunities for domestic health practice" would be acceptable to the profession and in any considerable demand by it. It would seem possible, with suitable counsel, to prepare such a list which should be convenient for reference by physicians desirous of developing this branch of medical activity.

It would be a fair question to ask in just what ways the practicing physician can contribute more to the prevention of disease than he is doing at present. It is believed that ways would become sufficiently apparent if the mental attitude were changed to include the idea. A few illustrations will show some of the procedures that readily occur. One of the first and easiest steps would be the full carrying out of one of the oldest tenets of medicine, which is to treat the patient rather than the disease. This presupposes a thorough examination of the patient and the discovery of any incipient disease or predisposition which he may have in addition to, or associated with, the particular complaint which brings him to the physician. This examination should include not only the physical body, but also the whole man—his habits and his mental worries and how he deals with them. It is not to be supposed that every physician will be a competent psychiatrist; nevertheless, present-day training should be sufficient, taken in conjunction with the intimate relation of confidence that should exist between physician and patient, to lay the basis for some very effective work in mental hygiene.

Thus far I have considered what may be done in the office and with office patients. When the physician visits the family, an immense field of preventive medicine becomes opened to his productive cultivation. It is my impression that the old-fashioned family physician knew far more about his families and their members as regards both their physical condition and their mental comfort than is the case nowadays. Undoubtedly, an enlightened return to this more intimate relationship would be better for the public and also, as I think, for the physician. Is there any good reason why the discovery of defects in the children of families in which a physician attends the adult members should be left to the school medical examination, if there happens to be one? Should not the family physician have detected and treated these in their incipience? And so with the adult members of families in which the children have been attended by so-called family physicians. Must their dietary diseases, their hernias, their tuberculosis, their mental maladjust-

ments go unrecognized until the patient himself or his relatives or employers or society in general complains of them?

The alarming extent to which defects and disease do go unrecognized until it is too late to accomplish anything more than palliation is sufficient evidence that somebody has failed. It is easy to blame it on the ignorance or carelessness of the individual, but I believe that much of this wastage could fairly be laid at the door of the physician who has neglected abundant opportunities for service, and also for legitimate and compensable medical practice.

CITY HEALTH OFFICERS, 1927

Directory of Those in Cities of 10,000 or More Population

Directories of the city health officers in the cities of the United States having a population of 10,000 or more have been published in the Public Health Reports [1] for each year from 1916 to 1926, for the information of health officers and others interested in public-health activities. These directories have been compiled from data furnished by the health officers. The cities included in this directory are those having 10,000 or more population.

The asterisk (*) indicates that the officer so designated has been reported to be a "whole-time" health officer. For this purpose a "whole-time" officer is defined as "one who does not engage in the practice of medicine or any other business, but devotes all his time to official duties."

City	Name of health officer	Official title
Alabama:		
Anniston	C. Hal. Cleveland, M. D.	City health officer.
Bessemer		
Birmingham	*Judson Davie Dowling, M. D.	Do.
Dothan	*L. Roy Poole, M. D.	County health officer.
Florence	*W. D. Hubbard, M. D.	City health officer.
Gadsden	*W. H. Harper, M. D.	City and county health officer.
Mobile	*C. A. Mohr, M. D.	County health officer.
Montgomery	*J. L. Bowman, M. D.	County and city health officer.
Selma	*L. Tennent Lee, M. D.	Do.
Tuscaloosa		
Arizona:		
Douglas	Geo. M. Dunne, M. D.	City health officer.
Phoenix	H. K. Beauchamp, M. D.	Do.
Tucson	A. G. Schnabel, M. D.	Do.
Arkansas:		
Fort Smith	*James E. Johnson, M. D.	District health officer.
Helena	*W. B. Bruce, M. D.	City health officer.
Hot Springs	*J. F. Merritt, M. D.	City and county health officer.
Jonesboro	E. J. Horner, M. D.	City health officer.
Little Rock	*Austin T. Barr, M. D.	Do.
North Little Rock	James A. Summers, M. D.	Do
Pine Bluff	*F. Michael Smith, M. D.	Do.
California.		
Alameda	Arthur Hieronymus, M. D.	Health officer and city physician.
Alhambra	*S. J. Stewart, M. D.	District medical director.
Bakersfield	Peter Joseph Cuneo, M. D., LL. B.	City health officer.
Berkeley	*James R. Scott, M. D., Ph. D.	Do.
Chico	Charles E. Tovee	Do.
Eureka	John N. Chain, M. D., B. S.	City physician.

[1] Reprints Nos. 346, 416, 494, 539, 599, 702, 767, 876, 930, 1025, and 1103 from the Public Health Reports.

City	Name of health officer	Official title
California—Continued.		
Fresno	C. Mathewson, M. D	City health officer.
Glendale	*E. M. Miller, M. D	Health officer.
Long Beach	*G. E. McDonald, M. D	City health officer.
Los Angeles	*George Parrish, M. D	Health commissioner.
Modesto	J. W. Morgan, M. D	Health officer.
Oakland	Frank L. Kelly, M. D., Dr. P. H.	Do.
Pasadena	*Warren F. Fox, M. D	Health officer and city physician.
Pomona	*Eugene F. Fontaine, M. D	Medical director.
Richmond	Charles Robert Blake, M. D	Commissioner of health.
Riverside	*William B. Wells, M. D	Do.
Sacramento	William Walter Cress, M. D	City health officer.
San Bernardino	Ivan Lewis Finkelberg, M. D	Do.
San Diego	*Alex M. Lesem, M. D	Health officer and superintendent.
San Francisco	*William C. Hassler, M. D., Ph. G.	Health officer and registrar.
San Jose	*Henry C. Brown, M. D	Health officer.
Santa Ana	*V. G. Presson, M. D	County health officer.
Santa Barbara	*Wm. H. Eaton, M. D	Health officer.
Santa Cruz	Norman R. Sullivan, M. D	City health officer.
Santa Monica		
Stockton	*John J. Sippy, M. D	District health officer.
Vallejo	E. A. Peterson, M. D	Health officer.
Colorado		
Boulder	J. H. Bush, M. D	Director of public health.
Colorado Springs	O. R. Gillett, M. D	City health officer.
Denver	*George A. Collins	Manager of health and charity.
Greeley	Burgett Woodcock, M. D	City physician.
Pueblo	*W. E. Buck, M. D	Chief, department of health.
Trinidad	G. W. Robinson, M. D	City physician.
Connecticut		
Ansonia	Frederick C. Goldstein, M. D	Health officer.
Bridgeport	*William Hall Coon, M. D	Do.
Bristol	Benjamin B. Robbins, M. D	City health officer.
Danbury	Everett J. S. Scofield, M. D	Do.
Derby	Thomas F. Plunkett, M. D	Do.
East Hartford	Harvey B. Goddard, M. D	Health officer.
Enfield	Frank F. Simonton, M. D	Do.
Fairfield	*Laurence E. Poole, M. D., Dr. P. H.	Health officer and school physician.
Greenwich	Albert E. Austin, M. D	Health officer.
Hartford	*Charles Porter Botsford, M. D.	Superintendent of health.
Manchester	D. C. Y. Moore, M. D	Chairman, board of health.
Meriden	H. De Forest Lockwood, M. D	Health officer.
Middletown	Thomas P. Walsh, M. D	Do.
Milford	Willis S. Putney, M. D	Town health officer.
Naugatuck		
New Britain	*Richard W. Pullen, M. D	Superintendent of health.
New Haven	*John L. Rice, M. D., B. S	Health officer.
New London	*Benjamin N. Pennell, D. V. S.	Do.
Norwalk	Robert E. Perdue, M. D	Do.
Norwich	Edward J. Brophy, M. D	Do.
Orange	Willis N. Butrick	Health officer.
Shelton	William S. Randall, M. D., Ph. B.	City health officer.
Stamford	*Raymond D. Fear, M. D., Dr. P. H.	Health commissioner.
Stonington (Mystic)	D. Edward Taylor, M. D	City health officer.
Stratford	DeRuyter Howland, M. D	Town health officer.
Torrington		
Wallingford		
Waterbury	*Edw. J. Godfrey, M. D	City health officer.
West Hartford	James E. Davis, M. D	Health officer.
Windham	F. E. Wilcox, M. D	Town health officer.
Willimantic	W. P. S. Keating, M. D	City health officer.
Delaware:		
Wilmington	Fred F. Armstrong, M. D	Secretary, board of health.
District of Columbia:		
Washington	*William C. Fowler, M. D	Health officer.
Florida.		
Jacksonville	*Noble A. Upchurch, M. D	City health officer.
Key West		
Miami	*W. A. Claxton, M. D., C. M	Chief, division of health.
Orlando	Sylvan McElroy, M. D	City physician.
Pensacola	W. D. Nobles, M. D	Health officer.
St. Petersburg	W. W. Harden, M. D	Health commissioner.
Tampa	*Ernest C. Levy, M. D	City health officer.
West Palm Beach	W. E. Van Landingham, M. D.	Do.
Georgia:		
Albany	*Hugo Robinson, M. D., Ph. G.	Health commissioner.
Athens	*B. B. Bagby, M. D	Do.
Atlanta	*J. P. Kennedy, M. D	City health officer.
Augusta	Eugene E. Murphey, M. D	President, board of health.
Brunswick	*H. L. Akridge, M. D	Commissioner of health.

City	Name of health officer	Official title
Georgia—Continued.		
Columbus	R. L. Williams, M. D	Health officer and city physician.
La Grange	*S. C. Rutland, M. D	Commissioner of health.
Macon	*J. D. Applewhite, M. D	City and county health officer.
Rome	*B. V. Elmore, M. D	Commissioner of health.
Savannah	*Victor H. Bassett, M.D	City health officer.
Valdosta	*Gordon T. Crozier, M. D	Do.
Waycross	*George E Atwood, M. D., Dr. P H.	Commissioner of health.
Idaho:		
Boise	*Van F. Peterson	City health officer.
Pocatello	Harold H. Hughart, M. D	City physician.
Twin Falls	George C. Halley, M. D	Health officer.
Illinois:		
Alton	D. F. Duggan, M. D	Health commissioner.
Aurora	Geo. W. Haan, M. D	Do
Belleville	B. H. Portundo, M. D	Public health officer.
Berwyn	*P. E. Wright, M. D	Health director.
Bloomington	*Charles E. Shultz, M. D	Do.
Blue Island	*L. A. Burkhart	Health commissioner.
Cairo	C. L. Weber, M. D	Health officer and city physician.
Canton		
Centralia	Gilford Nelson Welch, M. D., O. P T. M.	City physician.
Champaign	W. E. Schowengerdt, M D	Health officer
Chicago	*Herman N. Bundesen, M. D., D. Sc.	Commissioner of health.
Chicago Heights	E F. Hay, M. D	City physician.
Cicero	J. I. Wood, M. D	Health commissioner.
Collinsville	R H. Greaves, M. D	Health officer.
Danville	W. C. Dixon, M. D	Commissioner of health.
Decatur	*Sam H. Wilson	Health officer
East Moline	J Henry Fowler, M. D	Do.
East St. Louis	*A P Lauman	Commissioner of health.
Elgin	*A L. Mann, M. D	Executive officer, health department.
Evanston	*John W. H. Pollard, M. D, B L.	Commissioner of health.
Forest Park	Wm. C. Masslow, M. D	Do.
Freeport	Robert J. Burns, M. D	Do.
Galesburg	*Fred M. Giddings	Health officer.
Granite City	L. D Darner, M. D	Do.
Harvey	M. R Morse, M. D	Do
Herrin	J. B. Baker	Do
Jacksonville	*Warner H. Newcomb, M. D	County health officer.
Joliet	*Ed. J. Higgins, M. D	Commissioner of health.
Kankakee	C. K. Smith, M D	Health officer.
Kewanee	H. N. Heflin, M. D	Commissioner of health.
La Salle	*Arlington Ailes, M. D., C. P. H.	Health commissioner.
Lincoln	*Wesley Denny	Health officer.
Marion	H. D. Harris, M. D	Do.
Mattoon	O. W. Ferguson, M. D	City health officer.
Maywood	R. L. Reynolds, M. D	Health commissioner.
Moline	E. A. Edlen, M. D	City physician.
Mount Vernon	Geo. O. Culli, M. D	Do
Murphysboro	Ray B. Essick, M. D	City health physician.
Oak Park	Frank S. Needham, M. D	Commissioner of health.
Ottawa	Enos E. Palmer, M. D., B. S	Health officer.
Pekin	L. R. Clary, M. D	Do.
Peoria	Joel A. Eastman, M. D	Health commissioner.
Quincy	*Thomas W. Rhodes, M. D., Ph G.	Health officer.
Rock Island	J. R. Hollowbush, M. D	City physician.
Rockford	*N. O. Gunderson, M. D	Commissioner of health.
Springfield	H. H. Tuttle, M D	Superintendent of health.
Streator	D. S. Conley, M. D	City physician.
Urbana	W F. Burris, M. D	Chairman, board of health.
Waukegan	Howard C. Hoag, M. D	City health officer.
West Frankfort	C. E. Koons, M. D	Do.
Indiana:		
Anderson	E. M. Conrad, M. D	Secretary, board of health.
Bloomington		
Clinton	Ott Casey, M. D	Do.
Connersville	J. H. Clark, M. D	Do.
Crawfordsville	Thomas Z. Ball, M. D	City health officer.
East Chicago	M. A. Given, M. D	Secretary, board of health.
Elkhart	Allen A. Norris, M. D	Do.
Elwood	Harry W. Fitzpatrick, M. D	Secretary, health department.
Evansville	William E. Barnes, M. D., B. Sc.	Secretary, board of health.
Fort Wayne	D. R. Benninghoff, M. D	Health officer.
Frankfort		
Gary	B. W. Harris, M. D	Do.
Hammond	William A. Buchanan, M. D	Secretary, board of health.
Huntington	R. F. Frost, M. D	Do.
Indianapolis	*H. G. Morgan, M. D	Do.

City	Name of health officer	Official title
Indiana—Continued.		
Jeffersonville	*Davis L. Field, M. D	Secretary, board of health.
Kokomo	T. C. Cochran, M. D	Health officer.
La Fayette	Earl Van Reed, M. D	Secretary, board of health.
La Porte		
Logansport	*Fred G. Six	Health officer.
Marion	F. A. Priest, M. D	Secretary, board of health.
Michigan City	Nelle C. Reed, M. D	Health officer.
Mishawaka	B. J. Wyland, M. D	Secretary, board of health.
Muncie	Earle S. Green, M. D	City health commissioner.
New Albany	H. B. Shacklett, M. D	Secretary, board of health.
Newcastle	Clyde C. Bitler, M. D	Do.
Peru	Omer U. Carl, M. D	Do.
Richmond	Richard Schillinger, M. D	Do.
South Bend	J. B. Berteling, M. D	Do
Terre Haute	Geo. T. Johnson, M. D., B. C.	Health officer.
Vincennes	R. G. Moore, M. D	Secretary, board of health.
Wabash	P. G. Moore, M. D	Health officer.
Whiting	E. L. Dewey, M. D	Secretary, board of health.
Iowa		
Boone	William Woodburn, M. D	Health officer.
Burlington	George H. Steinle, M. D., B. Sc.	Do.
Cedar Rapids	John Redmond, M. D	City physician.
Clinton	H. R. Sugg, M. D	Health officer.
Council Bluffs	A. A. Robertson, M. D	Do.
Davenport	*Theodore J. Meyer	Do.
Des Moines	*Harley L. Sayler, M. D	City health commissioner.
Dubuque	*D. C. Steelsmith, M. D., C. P. H.	Director of health.
Fort Dodge	*E. S. Welch	Sanitary police.
Fort Madison		
Iowa City	Francis L. Love, M. D	Health officer.
Keokuk	Bruce L. Gilfillan, M. D	Physician to board of health.
Marshalltown	Matthew U. Chesire, M. D	City physician
Mason City	M. J. Fitzpatrick, M. D	Health physician
Muscatine		
Ottumwa	Friedrich A. Hecker, M. D	City physician.
Sioux City	*W. D. Hayes, C. P. H	Commissioner of public health.
Waterloo	J. R. Thompson, M. D	Health officer.
Kansas		
Arkansas City	B. C. Geeslin, M. D	President, board of health.
Atchison		
Chanute	M. A. Duncan, M. D	Health officer
Coffeyville	Walter H. Wills, M. D	City physician and health officer.
El Dorado	*Tom A. Jackson	Health officer
Emporia	*J. S. Fulton, M. D	Field agent, board of health.
Fort Scott	C. L. Mosley, M. D., B. S.	Assistant collaborating epidemiologist, U. S. P. H. S.
Hutchinson	Guy R. Walker, M. D	City physician.
Independence	Chester O. Shepard, M. D	Do
Kansas City	*S. David Henry, M. D., B. S.	Director of health.
Lawrence	E. R. Keith, M. D	Health officer.
Leavenworth	D. R. Sterett, M. D	City health officer.
Newton	O. W. Roff, M. D	Do
Parsons	L. B. Kackley, M. D	Do
Pittsburg	H. J. Veatch, M. D., B. S.	Do.
Salina	S. T. Blades, M. D	Do
Topeka	*Jos. A. Kinnaman, M. D., B. Sc.	Do.
Wichita	*J. E. Wolfe, M. D	Director of public welfare.
Kentucky:		
Ashland		
Covington	J. P. Riffe, M. D	Health officer.
Henderson	*F. C. Campbell, M. D	County health officer.
Lexington	*Chas. H. Voorhies, M. D	Health officer.
Louisville	Griffin C. Kelly, M. D., B. S.	City health officer.
Newport	John Todd, M. D	Do.
Owensboro	*R. M. Hathaway, M. D	Director of health.
Paducah	J. C. Morrison, M. D	City health officer.
Louisiana:		
Alexandria	J. A. Packer, M. D	President, board of health.
Baton Rouge	Thomas J. McHugh, M. D	City health officer.
Lake Charles	J. G. Martin, M. D	Do
Monroe	D. I. Hirsch, M. D	Health officer.
New Orleans	*William Henry Robin, M. D	Superintendent of public health.
Shreveport	*Arthur G. Heath, M. D	President, board of health.
Maine.		
Auburn	*L. J. Dumont, M. D	Health officer.
Augusta	George A. Coombs, M. D	Do.
Bangor	*Harry D. McNeil, M. D	Do
Bath	*Chester S. Kingsley	City sanitarian.
Biddeford	*John W. Mahoney	Health officer.
Lewiston	*L. J. Dumont, M. D	Do.
Portland	*Thomas Tetreau, M. D	Do.
Sanford	*William H. Kelly, M. D	Do.
South Portland	Reginald T. Lombard, M. D	Do.
Waterville	*William J. Young, M. D	Do.
Westbrook		

City	Name of health officer	Official title
Maryland:		
Annapolis		
Baltimore	*C. Hampson Jones, M. D., C M.	Commissioner of health and registrar of vital statistics.
Cumberland	*Harvey H. Weiss, B. Sc.	Health officer and registrar.
Frederick	*E. C. Kefauver, M. D.	Health officer.
Hagerstown	Perry F. Prather, M. D.	County health officer.
Massachusetts:		
Adams		
Amesbury	*Charles B. Kingsbury	Agent, board of health.
Arlington	*William H. Bradley	Do.
Athol	Marion B. Sibley, M. D.	Secretary, board of health.
Attleboro	William O. Hewitt, M. D.	Health officer.
Belmont	*Henry Berger, jr., C. P. H.	Agent, board of health.
Beverly	*Alonzo O. Woodbury	Do.
Boston	*Francis X. Mahoney, M. D., D. V. S.	Health commissioner
Braintree	Harry F. Vinton.	Agent, board of health.
Brockton	Joseph H. Lawrence, M. D.	Health officer
Brookline	Francis P. Denny, M. D.	Do
Cambridge	Simon B. Kelleher, M. D.	Medical inspector.
Chelsea	*John F. Welch	Health officer.
Chicopee	*Gertrude M. DeWitt	Agent, board of health.
Clinton	*Frederick E. Murphy	Do
Danvers	*Hugo Nappe, R. N.	Health officer
Dedham	Edward Knobel, M. D. V.	Chairman, health department.
Easthampton	Clemence C. Buckner	Agent, board of health
Everett	*William F. Hogan	Do
Fall River	*Ernest M. Morris, M. D.	Health Commissioner.
Fitchburg	*Fred R. Brigham	Agent, board of health.
Framingham	*Everett B. Johnson, S. B.	Do.
Gardner	*William P. O'Donnell	Do
Gloucester	George S. Rust, M. D.	Physician, board of health.
Greenfield	*George P. Moore	Agent, board of health
Haverhill	*George T. Lennon	Do.
Holyoke	*J. Sidney Wright	Do.
Lawrence	Peter L. McKallagat, M. D.	Chairman, board of health.
Leominster	B. P. Sweeney, M. D.	Do
Lowell	*Francis J. O'Hare	Agent, board of health.
Lynn	William T. Hopkins, M. D.	Commissioner of public health.
Malden	H. L. Richardson	Clerk, board of health
Marlboro	*John J. Cassidy	Agent, board of health
Medford	William N. Lanigan, M. D.	Medical inspector
Melrose	Clarence P. Holden, M. D.	Chairman, board of health.
Methuen	*Albert Slack	Clerk, board of health
Milford	James Birmingham	Agent, board of health
Milton	*Paul W. Kimball, M. D.	Do
Natick		
New Bedford	*Wm. G. Kirschbaum	Agent and executive officer.
Newburyport	*William Thurston	Agent, board of health
Newton	*Francis Geo. Curtis, M. D.	Chairman, board of health.
North Adams	*Douglas W. Hyde, S. E.	Agent, board of health.
Northampton	George R. Turner	Do
Northbridge	Daniel C. Duggan	Chairman, board of health.
Norwood	*James J. Mulvehill, D. V. D.	Agent, board of health.
Palmer	J. P. Schneider, M. D.	Chairman, board of health.
Peabody	*Percy F. Murray	Agent, board of health.
Pittsfield	*Willys M. Monroe, M. D.	Health officer.
Plymouth	Walter D. Shurtleff, M. D.	Do
Quincy	Edmund B. Fitzgerald, M. D.	Health commissioner.
Revere	Francis Lacata, M. D.	Chairman, board of health.
Salem	*John J. McGrath	Agent, board of health.
Saugus	Charles E. Light	Chairman, board of health.
Somerville	Frank L. Morse, M. D.	Medical inspector
Southbridge	*Albert R. Brown	Agent, board of health.
Springfield	*Jacob R. Sackett	Do.
Taunton	William H. Bennett, M. D.	Chairman, board of health.
Wakefield	David Taggert	Health officer.
Waltham	C. B. Fuller, M. D.	Director, public welfare.
Watertown	*John W. Tapper	Agent, board of health.
Webster	John H. McCoy	Sanitary inspector.
West Springfield	John J. Lysaght	Agent, board of health.
Westfield	Robert M. Marr, M. D.	Chairman, board of health.
Weymouth		
Winchester	*Maurice Dinneen	Agent, board of health.
Winthrop	*William D. Childress	Do.
Woburn	*Edward T. Gorman	Agent and secretary.
Worcester	*T. F. Kenney, M. D.	Director, board of health.
Michigan:		
Adrian	Emily S. Stark, M. D.	Health officer.
Alpena	D. A. Cameron, M. D.	Do.
Ann Arbor	John A. Wessinger, M. D.	Do.
Battle Creek	*A. A. Hoyt, M. D.	Do.
Bay City	G. W. Moore, M. D.	City physician.
Benton Harbor	Carl A. Mitchell, M. D.	Director of public health.

City	Name of health officer	Official title
Michigan—Continued.		
Cadillac	John F. Gruber, M. D	Health officer.
Detroit	*Henry F. Vaughan, D P. H.	Commissioner of health.
Escanaba	Harry T Defnot, M. D	Health officer.
Flint	*C. V. Merritt, M. D	Do.
Grand Rapids	*Clyde C Slemons, M. D	Do.
Hamtramck	Frank J. Cyman, M. D	Do.
Highland Park	W. N. Braley, M. D	Do.
Holland		
Ironwood	*Louis Dorpat, M. D	Do.
Ishpeming	*George G. Barnett, M. D	Do.
Jackson	*Floyd R. Town, M. D	Do.
Kalamazoo	*Alvin H. Rockwell, M. D	Do.
Lansing	*S. R. Hill, M. D	Health director.
Marquette	*Lowell L. Youngquist, M. D., B Sc.	Health officer.
Monroe	James A. Humphrey, M. D	Do.
Mount Clemens	Edward G. Folsom, M. D	Do.
Muskegon	R J. Harrington, M D	Do.
Muskegon Heights	William S. Chapin, M. D	Do.
Owosso	R. C Mahaney, M. D	Do.
Pontiac	*C. A. Neafie, M. D., M. S. P. H	Director of public health.
Port Huron	L. R Gaddis, M. D	Do.
River Rouge	Harvey S Broderson, M. D	Health officer
Saginaw	*William H Pickett, M D., C. P. H.	Do.
Sault Ste Marie	*John J Griffin, M. D	Do.
Traverse City	George A. Holliday, M. D., D. D. S.	Do.
Wyandotte	Alfred C. Drouillard, M. D	Do
Minnesota		
Albert Lea	Donald S. Branbam, M. D., B. S.	Do.
Austin	Clifford C. Leck, M. D	Do
Brainerd	R. A Beise, M. D	Chairman, board of health.
Duluth	Lincoln A. Sukeforth, M D	Director of public health.
Faribault	Frederick C. Davis, M. D	Health commissioner.
Hibbing	Thos. A. Estrem, M. D	Health officer
Mankato	E. L. Schield, M. D , M S	Health commissioner.
Minneapolis	*Francis E. Harrington, M. D., B. S , LL. D.	Do.
Rochester	C. H. Mayo, M. D [1]	Health officer.
St Cloud	*Paul Scherer	Sanitary officer
St. Paul	*Benj. F. Simon, M. D.	Health officer.
Virginia	R P. Pearsall, M. D.	Do.
Winona	William V. Lindsay, M D	Do.
Mississippi:		
Biloxi	G. F Carroll, M D	Do.
Columbus	L. B. Morris, M. D., B. S	Do.
Greenville	*A J Ware, M D	City and county health officer.
Hattiesburg		
Jackson	*C. C. Applewhite, M. D	Director, county health unit.
Laurel	*Wm B. Harrison, M D	Do.
Meridian	T. J. Houston, M. D	City health officer.
Natchez	W. H. Aikman, M. D	Do.
Vicksburg		
Missouri:		
Cape Girardeau	*Lee Atchison	Do.
Carthage	W. E. Steele	Do.
Columbia	W. A. Norris, M. D	City health commissioner.
Hannibal	*Eugene M. Lucke, M. D	Field agent.
Independence	H. A. Schroeder, M. D	City physician.
Jefferson City	Hugh G. Dallas, M. D	Do.
Joplin	*M. B. Harutun, M. D	Commissioner of health.
Kansas City	*Ernest W. Cavaness, M. D., B. Sc., B. L., B S.	Director of health.
Moberly	Jesse Maddox, M. D	City health officer.
St. Joseph	William W. Gray, M. D	Do.
St. Louis	*Max C. Starkloff, M. D	Health commissioner.
Sedalia	*C. T. Robison	Sanitary officer.
Springfield	*Lon Sharp	Commissioner of health.
Webster Groves	Arthur W. Westrup, M. D	Health commissioner.
Montana:		
Anaconda	W. E. Long, M. D	Health officer.
Billings	Albert E. Stripp, M. D	City health officer.
Butte	Joseph J. Kane, M. D	Do.
Great Falls	*Thomas F. Walker, M. D	Do.
Helena	*Arthur Jordan, M. D	Field agent U. S. P. H. S.
Missoula	*F. D. Pease, M. D	Health officer.

[1] A full-time deputy health officer, D. C. Lochead, M. D. C. M., D. P. H., is employed.

City	Name of health officer	Official title
Nebraska:		
Grand Island	J. G. Woodin, M. D.	City physician.
Lincoln	M. F. Arnholt, M. D.	Superintendent of health.
North Platte	Josiah B. Redfield, M. D.	City physician.
Omaha	A. S. Pinto, M. D.	Health commissioner.
Nevada.		
Reno	A. F. Adams, M. D., Ph. G.	Secretary board of health.
New Hampshire.		
Berlin	*Eli A. Marcoux, B. S.	Health officer.
Claremont	William P. Prescott	Do.
Concord	*Charles Palmer	Do.
Dover	*Wm. E. Whiteley	Executive officer.
Keene	*Fred C. Nims	Health officer.
Laconia	Richard W. Robinson, M. D.	Secretary board of health.
Manchester	*Howard A. Streeter, M. D.	Health officer.
Nashua	P. S. McLaughlin, M. D.	Chairman board of health.
Portsmouth	George A. Tredick, M. D.	Health officer.
Rochester		
New Jersey:		
Asbury Park	*Budd H. Obert	Health officer and registrar of vital statistics.
Atlantic City	Samuel L. Salasin, M. D.	Health officer.
Bayonne	William W. Brooke, M. D.	Do.
Belleville	*Eugene T. Berry	Do.
Bloomfield	*Joseph C. Salie, P. H. G., D. O.	Do.
Bridgeton	*Charles E. Bellows, Ph. G.	Sanitary inspector
Camden	*Arthur L. Stone, M. D.	Director of public health.
Carteret	Herbert L. Strandberg, M. D.	Health officer
Clifton	Jeremiah P. Quinlan	Do
Collingswood	Ralph N. Wright, M. D.	Medical inspector.
Dover	*John G. Taylor	Health officer.
East Orange	*F. J. Osborne, S. B.	Do
Elizabeth	*Louis J. Richards, B. S.	Do.
Englewood	*John A. Manson	Sanitary inspector.
Garfield	Chas. B. Bleasby, M. D.	Health officer.
Gloucester	J. Alonzo Beek, M. D.	Do
Hackensack	*L. Van D. Chandler	Do.
Harrison	*John T. McClure	Do
Hoboken	Joseph F. X. Stack, M. D.	Commissioner of health.
Irvington	*Paul C. Schotte, Ph. D.	Health officer.
Jersey City	*James Hogan, M. D., C. P. H.	Do
Kearny	*Amos Field, jr.	Do
Lodi	Henry H. Brevoort, M. D.	Health inspector.
Long Branch	*R. Clifford Errickson	Health Officer.
Millville	F. Vernon Ware, M. D.	Do.
Montclair	*Carl T. Pomeroy, C. P. H.	Do
Morristown	*John F. Kilkenny	Do
New Brunswick	E. Irving Cronk, M. D.	Health officer and registrar of vital statistics
Newark	*Charles V. Craster, M. D., D. P. H.	Health officer.
Nutley	*Eugene H. Sullivan, R. N.	Do.
Orange	*Lenore Young Wylie, R. N.	Health officer and registrar of vital statistics
Passaic	John N. Ryan, M. D.	Health officer.
Paterson	*Fred P. Lee, M. D.	Do
Perth Amboy	*Charles S. Thompson, D. V. S.	Do.
Phillipsburg	Alma L. Williston, M. D.	Do
Plainfield	*N. J. Randolph Chandler	Do.
Rahway	*Fred M. Williams	Do
Ridgefield Park	William F. Reynolds, D. V. M.	Sanitary inspector.
Rutherford	*Marine Dunn	Do
Summit	Henry P. Dengler, M. D.	Executive officer.
Trenton	*Alton S. Fell, M. D.	Health officer.
Union City	*Frank A. Frederick	Do.
West New York	*Randolph Kunze	Chief inspector.
West Orange	*David E. Buckley	Health officer.
Westfield	*Andrew Carney	Executive officer.
New Mexico:		
Albuquerque	*G. W. Luckey, M. D.	County health officer.
New York:		
Albany	James W. Wiltse, M. D.	Health officer.
Amsterdam	Julius Schiller, M. D.	Do.
Auburn	Thomas C. Sawyer, M. D.	Do.
Batavia	Emery F. Will, M. D.	Do.
Beacon	Charles B. Dugan, M. D., Ph. B.	Do.
Binghamton	Chalmer J. Longstreet, M. D.	Do.
Buffalo	*Francis E. Fronczak, M. D., LL. B., D. P. H.	Health commissioner
Cohoes	E. M. Bell, M. D.	Health officer.
Corning	Henry E. Elwood, jr., M. D.	Do.
Cortland	A. C. Knapp, M. D.	Do.
Dunkirk	George E. Ellis, M. D.	Do.
Elmira	Reeve B. Howland, M. D.	Do.
Endicott	Dorr W. Hardy, M. D.	Do.

City	Name of health officer	Official title
New York—Continued.		
Freeport	Wm. H. Runcie, M. D	Health officer.
Fulton	C. L. Fessenden, M. D	Do.
Geneva	C. W Grove, M. D	Do.
Glens Falls	*Virgil D. Selleck, M. D	Do.
Gloversville	Alexander L. Johnson, M. D	Do.
Herkimer		
Hornell	George E. Taylor, M. D	Do
Hudson	Charles R. Skinner, M. D., B. S	Do
Ilion	Frank B. Conterman, M. D	Do.
Ithaca	*Lewell T. Genung, M. D	Do.
Jamestown	William M. Sill, M. D	Superintendent of public health.
Johnson City	Rollin O. Crosier, M. D	Health officer.
Johnstown	Guy Vail Wilson, M. D	Do.
Kingston	Daniel Connelly, M. D	Do.
Lackawanna	Anthony S. Culkowski, M. D	Do.
Little Falls	Augustus B. Santry, M. D	Do.
Lockport	T. Edwin O'Brien, M. D	Do
Middletown	H J. Shelley, M. D	Do.
Mt Vernon	Frank W. Shipman, M. D	Commissioner of health.
New Rochelle	*Edwin H. Codding, M D	Health officer.
New York	Louis I. Harris, M. D., D. P. H	Commissioner of health.
Newburgh	Thomas J. Burke, M. D	Health officer.
Niagara Falls	E E. Gillick, M. D	Do.
North Tonawanda	H C Lapp, M. D	Do.
Ogdensburg	John W Benton, M. D	Do.
Olean	W. E. McDuffie, M. D	Do.
Oneida	Donald H. Conterman, M. D., B. S.	Do.
Oneonta		
Ossining		
Oswego	Harry S Albertson, M D	Do
Peekskill	Fred A Snowden, M. D	Do
Port Chester	W. J Sheehan, M D	Do.
Port Jervis	G. Otto Pobe, M D	Do
Poughkeepsie	*William H Conger, M D	Do
Rensselaer	Earle W. Wilkins, M. D	Do
Rochester	*George Washington Goler, M D , D. Sc	Do.
Rome	Roy J Marshall, M D	Do.
Salamanca	P. H. Bourne, M D	Do
Saratoga Springs	Charles B. Small, M D	Do
Schenectady	J. H Collins, M D	Commissioner of health.
Syracuse	Herman G Weiskotten, M D	Do
Tonawanda		
Troy	Wm. N. Campaigne, M D	Health officer.
Utica	Hugh H. Shaw, M D	Do
Watertown	*L. M Coulter, M D , C. M	Do.
Watervliet	Charles A. Birmingham, M. D , C M.	Commissioner of health.
White Plains	Edwin G. Ramsdell, M D	Health officer
Yonkers	Clarence W Buckmaster, M. D., C. P. H	Commissioner of health.
North Carolina.		
Asheville	*Daniel C. Sevier, M. D	Health officer.
Charlotte	*W. A. McPhaul, M. D	City and county health officer.
Concord	*Quint E. Smith, C. E	Sanitary inspector
Durham	*J. H. Epperson, M. B	Superintendent of health.
Gastonia	Mc. G. Anders, M. D	City physician.
Goldsboro		
Greensboro	*C. Curtis Hudson, M. D	Health officer.
High Point	S. S. Coe, M. D	City physician.
Kinston	*Robert S. McGeachy, M. D	County health officer.
New Bern	*D. F Ford, M. D	Health officer.
Raleigh	*A. C Bulla, M. D	Do.
Rocky Mount		
Salisbury	*Chas. Wallace Armstrong, M. D.	City and county health officer.
Wilmington	*John H. Hamilton, M. D	County health officer.
Wilson	*L. J. Smith, M. D	Health officer.
Winston-Salem	*R. L. Carlton, M. D	Do
Ohio:		
Akron	*Melville D. Ailes, M. D., LL. B., B. Sc.	Director of health.
Alliance	Earl Mussleman, M. D	Health commissioner.
Ashland	E. L. Clem, M. D	Director of public welfare.
Ashtabula	A. J. Pardee, M. D	City health officer.
Barberton	W. A. Mansfield, M. D	Health commissioner.
Bellefontaine	A. J. McCracken, M. D	Do.
Bucyrus	A. H. McCrory, M. D	Do.
Cambridge	C. L. Vorhies, M. D	Do.
Campbell	J. S. Mariner, M. D	Do.
Canton	Frank M. Sayre, M. D	Do.
Chillicothe	*G. E. Robbins, M. D	Commissioner of health.
Cincinnati	*William H. Peters, M. D	Health commissioner.
Cleveland	*Harry L. Rockwood, M. D	Do.
Cleveland Heights	*Robert Lockhart, M. D	Director of health.

City	Name of health officer	Official title
Ohio—Continued.		
Columbus	*James A Beer, M. D, B Sc	Commissioner of health.
Conneaut	Inez Hyatt, M. D	Health commissioner.
Coshocton	*D. M Criswell, M D	Do.
Cuyahoga Falls	*R H. Markwith, M. D	Do.
Dayton	*A. O. Peters, M D	Commissioner of health.
East Cleveland	George W Stober, M. D	Director of health.
East Liverpool	Edward W Miskall, M. D	Health commissioner.
Elyria	G. E French, M D	Do.
Findlay	*Edw W Misamore, M D	Do.
Fostoria	Thos M Bridges	Do
Fremont	E L. Vermilya, M D	Do.
Hamilton	Wilmer E. Griffith, M. D., B. S.	Do.
Ironton		
Kenmore	*R. H Markwith, M D	Do.
Lakewood	Wallace J Benner, M. D	Do.
Lancaster	Clifford B Snider, M D., M. Sc.	Do.
Lima	James B Poling, M. D	Do.
Lorain	Vallord Adair, M D	Do.
Mansfield	*Charles L Schafer, M D	Acting health commissioner.
Marietta	J B. McClure, M D	Health commissioner.
Marion	*W. J Weiser, M. D	Do
Martins Ferry	*Charles Keller	Do.
Massillon	*John H Williams	Do.
Middletown	*G D Lummis, M. D	Do.
New Philadelphia	*Joseph Blickensderfer, M D	Do.
Newark	W. H Knauss, M. D, B. Sc	Do
Niles	W A Weiner, M D	Do.
Norwood	Lewis O Saur, M. D	Do.
Piqua	J G Freshour, M D	Do.
Portsmouth	Oral D Tatje, M D, B P H.	Do.
Salem	Thomas T. Church, M. D	Do.
Sandusky	*F. M. Houghtaling, M. D	Do
Springfield	*Oscar M Craven, M D	Director of public health.
Steubenville	*John A Madigan	Health commissioner.
Tiffin	J A. Gosling, M D	Do.
Toledo	Robt H Elrod, M D	Do
Warren	M. T Knoppenberger, M. D	Do
Youngstown	H. E Welch, M. D	Do.
Zanesville	David J Evans, M. D	Do.
Oklahoma:		
Ardmore	A Y Easterwood, M D, B S.	City health officer.
Chickasha	Arthur W. Nunnery, M D	Do
Enid	R C Baker, M. D	Do.
Guthrie	William C Miller, M D	County superintendent of health.
McAlester	*Charles M Pearce, M. D	Do
Muskogee	I. C Wolfe, M D	City health officer
Oklahoma City	*Walter H. Miles, M. D	Health director.
Okmulgee		
Sapulpa	P. K. Lewis, M. D	Superintendent of health.
Shawnee	T. C. Sanders, M. D	Do.
Tulsa	D. A. Beard, M. D	Do.
Oregon:		
Astoria	Nellie S. Vernon, M D	City and county health officer.
Eugene	S. M. Kerron, M. D	City health officer.
Portland	John G Abele, M. D	Do.
Salem	*Walter H. Brown, M. D	Do.
Pennsylvania:		
Allentown	*J. Treichler Butz, M D., D. D. S.	Health officer.
Altoona	*T. G. Herbert	Chief, bureau of health.
Ambridge	*Louis Herrmann	Health officer.
Beaver Falls	*Nelson W. Osmond	Do.
Berwick	*C E. Ross	Do.
Bethlehem	*J E. Brader	Do.
Braddock	*James E. Wills	Do.
Bradford	*Carl L Peterson	Do.
Bristol	John M. Wright	Do
Butler	*J Fred Leetch	Do.
Cannonsburg	*J M. Templeton	Do.
Carbondale	*Daniel Munley	Sanitary officer.
Carlisle	*John T. Glass	Health officer.
Carnegie	Joseph Lewis	Do.
Carrick		
Chambersburg	*Frank J. Croft	Do.
Charleroi	*W. M. Darby	Health inspector.
Chester	*Mark G Murtaugh	Health officer.
Clairton	*W. F. Connelly	Do.
Coatesville	Charles V. Peace, V. M. D	Do.
Columbia	George M. Rodenhauser	Do.
Connellsville	*John Irwin	Sanitary officer.
Dickson City	*Frank J. Meehan	Health officer.
Donora	*John W. Harrington	Do.
Du Bois	L. W. Quinn, M. D	Do.
Dunmore	William Rinaldi	Do.

City	Name of health officer	Official title
Pennsylvania—Continued.		
Duquesne	*Emil Elmgren	Health officer.
Easton	J. James Condran, M. D.	Do.
Elwood City	*Louis Young	Do.
Erie	James R. Smith, M. D.	Do.
Farrell	*W. C. Heinzo	Do.
Franklin	Charles H. Brown, M. D.	Medical health officer.
Greensburg	*T. Ray Hunter	Health officer.
Harrisburg	John M. J. Raunick, M. D.	Director.
Hazleton	*P. J. Bonner	Health officer.
Homestead	*James L. King	Do.
Jeanette	*Charles E. Walter	Chief health officer.
Johnstown	L. W. Jones, M. D.	Health officer.
Kingston	*J. F. Seward	Do.
Lancaster	*Benj. F. Charles	Do.
Lansford	David Davis	Do.
Latrobe	W. T. Osborne	Do.
Lebanon	F. B. Witmer, M. D.	Do.
Lewistown	H. E. Fetterolf	Do.
McKees Rocks	*B. V. Anderson	Do.
McKeesport	*Daniel F. Marsh	Do.
Mahanoy	*John Sullivan	Do.
Meadville	John Laley	Do.
Monesson	*Francis E. Gibson	Do.
Mount Carmel	W. F. Stine	Do.
Nanticoke	*H. J. Abbott	Do.
New Castle	William L. Steen, M. D.	Do.
New Kensington		
Norristown	*Chas. E. White	Do.
North Braddock	*Paul V. Hamilton	Do.
Oil City	*W. J. Lewis	Do.
Old Forge	Joseph Filice	Do.
Olyphant	Dennis O'Connor	Do.
Philadelphia	*Wilmer Krusen, M. D.	Director, department of public health.
Phoenixville	Allen L. Bevan	Health officer.
Pittsburgh	*Richard G. Burns, M. D.	Director of public health.
Pittston	*Michael A. McHale	Health officer.
Plymouth	H. G. Templeton, M. D.	Do.
Pottstown	*A. John André	Do.
Pottsville	*David A. Thomas	Do.
Punxsutawney	J. Frank Boney	Do.
Reading	*Ira James Hain, M. D.	Do.
Scranton	J. D. Lewis, M. D.	Director of public health.
Shamokin	*Fred Beiser	Health officer.
Sharon	*Louis C. Brainard	Sanitary officer.
Shenandoah		
Steelton	*E. G. Butler	Health officer.
Sunbury	*Victor A. Koble	Do.
Swissvale	*W. H. Rushworth	Do.
Tamaqua	Lamont Perrine	Do.
Taylor	E. E. Edwards, M. D.	Do.
Tyrone	John J. Patterson	Do.
Uniontown	*W. C. Hall	Do.
Vandergrift	*J. Elmer Spang	Do.
Warren	*Ralph N. Brown	Do.
Washington	*Thos. W. Henderson	Do.
Waynesboro	*Percy H. Snowberger	Do.
West Chester	*Enoch P. Hershey	Do.
Wilkes-Barre		
Wilkinsburg	*J. M. Snyder	Do.
Williamsburg	E. T. Clark	Health officer.
Williamsport	R. F. Trainer, M. D.	Do.
Windber	S. W. McMullen	Do.
Woodlawn	*J. E. Tanner	Do.
York	J. Frenk Small, M. D.	Director of public health.
Rhode Island:		
Bristol		
Central Falls	Adolph R. V. Fenwick, M. D.	Superintendent of public health.
Cranston	Daniel S. Latham, M. D.	Do.
Cumberland	Stephen A. Kenney, M. D.	Health officer.
East Providence	W. H. T. Hamill, M. D.	Do.
Newport	Edward V. Murphy, M. D.	Commissioner of health.
Pawtucket	Florian A. Ruest, M. D.	Superintendent of health.
Providence	Charles Value Chapin, M. D., LL. D., Sc. D.	Do.
Warwick	Ralph Fred Lockwood, M. D.	Health officer.
West Warwick	Daniel S. Harrop, M. D.	Do.
Westerly	Samuel C. Webster, M. D., Ph. G.	Superintendent of health.
Woonsocket	Adelbert H. Monty, M. D.	Health officer.
South Carolina:		
Anderson	*E. R. Van De Grift, D. V. M.	Do.
Charleston	*Leon Banov, M. D.	Do.
Columbia	R. T. Jennings, M. D.	Do.
Florence	*P. H. Brigham, M. D., D. D. S.	Health commissioner.

City	Name of health officer	Official title
South Carolina—Continued.		
Greenville	*Irving S. Barksdale, M. D.	Commissioner of health.
Spartanburg		
Sumter	*John R. Sumter	Health officer.
South Dakota:		
Aberdeen	*Paul V McCarthy, M D.	City and county health officer.
Sioux Falls	W. E Donahoe, M D	Health officer.
Watertown	H. M Freeburg, M. D.	Superintendent, county board of health.
Tennessee.		
Chattanooga	*C. B. Crittenden, M. D	Director of health
Jackson	Hermon Hawkins, M. D	City physician.
Johnson City	J. T. McFaddin, M D	Do
Knoxville	*Marvin F. Haygood, M D., C. P. H.	City health officer.
Memphis	*J. J Durrett, M D , Ph G.	Superintendent of health.
Nashville	*John Overton, M. D.	City health officer.
Texas		
Abilene	Scott W. Hollis, M D	City and county health officer.
Amarillo	*R M. Walker, M D	City health officer
Austin	*Leo E Edens, M D.	Director of public health.
Beaumont	Dru McMickin, M. D	City health officer
Brownsville	W. E. Spivey, M D	Do
Cleburne	James D Osborn, M D	Do.
Corpus Christi	M J Perkins, M D	Do.
Corsicana	Wm R Sneed, M D.	City physician
Dallas	*N W. Andrews, M D.	Director of public health.
Del Rio	B F Orr, M D	City health officer
Denison	Alex W Acheson, M D.	Health officer
Eastland	E R Townsend, M D.	Do
El Paso	*Richard A Wilson, M. D	Do
Fort Worth	*L. H Martin, M. D.	Director of public health.
Galveston	Walter Kleberg, M D	City health officer.
Houston	*Arthur H Flickwir, M D	Do.
Laredo		
Marshall		
Orange	J E Reeves, M D.	Do
Palestine	John M Colley, M D.	Do
Paris		
Port Arthur	J P. Reed, M D	Do.
Ranger	John B Stackable, M D.	City physician.
San Angelo	A. C DeLong, M D.	City health officer.
San Antonio	W A. King, M D	Health officer
Sherman	A. L Ridings, M. D.	Do
Temple		
Texarkana	Wm. Hibbitts, M. D.	City physician
Tyler	Albert Woldert, M D , Ph. G.	City health officer.
Waco	T E Tabb, M D.	Do
Wichita Falls	*L. I Lucey, M. D., D V. M.	Director of sanitation.
Utah:		
Logan	P W Eliason, M. D.	City physician.
Provo	Arnold E Robison, M D., B. S.	Do
Ogden	N H Savage, M D	Do
Salt Lake City	W. Christopherson, M. D.	Health commissioner.
Vermont:		
Barre	M D Lamb, M. D.	Health officer.
Bennington	*Jos. M. Ayres	Do.
Burlington	*James W Courtney, M D	Do.
Rutland	Geo Rustedt, M. D.	Do
Virginia		
Alexandria	*Wm Clyde West, M. D.	Do.
Charlottesville	*George B. Young, M D.	Do.
Danville	*R. W. Garnett, M D.	Do
Lynchburg	*Mosby G. Perrow, Ph D.	Director public welfare.
Newport News	*D St Clair Campbell, M D., C M.	Do.
Norfolk	*Powhatan S. Schenck, M D.	Health commissioner.
Petersburg	Robert Alston Martin, M. D	Health officer.
Portsmouth	*Lonsdale J. Roper, M. D.	Director of public welfare.
Richmond	*W. Brownley Foster, M. D., B. S	Do.
Roanoke	*Coleman B. Ransone, M. D., L. I	Health officer.
Staunton	J. F. Fulton, M. D.	Do.
Suffolk	*Challis H. Dawson, M. D.	Director health department.
Washington:		
Aberdeen	Arthur Skarperud, M. D., B. S.	City health officer
Bellingham		
Bremerton	T. H. Holmes, M. D.	Do.
Everett	J. Spencer Purdy, M. D	Do.
Hoquiam	Harry C. Watkins, M. D.	Do.
Seattle	*E. T. Hanley, M. D	Commissioner of health.
Spokane	*Ralph Hendricks, M. D.	Commissioner of public affairs.
Tacoma	*Herman S. Judd, M. D.	Director of health.

City	Name of health officer	Official title
Washington—Continued.		
Vancouver	Ralph L. Lieser, M. D., Ph. G.	City health officer.
Walla Walla	*Geo. H. T. Sparling, M. D.	City and county health officer.
Yakima	*H. H. Smith, M. D.	Do.
West Virginia:		
Bluefield	*David B Lepper, M.D., C.P.H.	Director of health.
Charleston	J. B. Lohan, M. D.	Health commissioner.
Clarksburg	*Robert Linn Osborn, M. D.	City physician
Fairmont	*J. A. Jamison, M. D.	City health officer.
Huntington	J. E. Rader, M. D.	President, board of health.
Martinsburg	James A. Duff, M D.	County health commissioner.
Morgantown	*Harry H. Pierce, M. D.	Health Officer.
Moundsville	*D. Berman, M. D., D. P. H.	City and county health officer
Parkersburg	*Theodore R Meyer, M. D	City health commissioner
Wheeling	*William Hay McLain, M. D.	City and county health commissioner.
Wisconsin		
Appleton	Frank P. Dohearty, M. D.	City health officer
Ashland	C. O. Hertzman, M D.	Health commissioner.
Beloit	*Lewis M Field, M. D.	Health officer.
Eau Claire	J. F. Farr, M D.	Executive officer
Fond du Lac	A. C. Dana, M D	Health commissioner
Green Bay	*T J. Oliver, M D.	Commissioner of health.
Janesville	Fred B. Welch, M. D	City health officer
Kenosha	*Gustave Windesheim, M D.	Director of health.
La Crosse	*Anthony M Murphy	Acting health commissioner.
Madison	*Louis Fauerbach, M. D.	Health officer
Manitowoc	Max Staehle, M D	Commissioner of health.
Marinette	S. Burglund, M. D.	Health commissioner
Milwaukee	*John P Koehler, M D	Commissioner of health
Oshkosh	*Edward Joseph Campbell, M. D.	Health commissioner
Racine	*William Waldo Bauer, M D	Health officer
Sheboygan	*Joseph C. Elfers, M D	Commissioner of public health
Stevens Point	F. A. Southwick, M. D.	Health commissioner.
Superior	P G. McGill, M D.	Do.
Waukesha	Frank M. Schoele, M D.	Do
Wausau	*L F. Bugbee	Health officer
West Allis	*Samuel C. McCorkle, M D.	Health commissioner.
Wyoming		
Casper	*H. Garst, M D, Ph G.	Director of health
Cheyenne	N. C. Nelson, M D.	County health officer.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Report of the Cooperative Public Health Work in Jamaica During 1926. B. E. Washburn. Government Printing Office, Kingston, 1927. 23 pages. (Abstract by N. R. Stoll.)

This report, while it deals in some detail with the results of antihookworm campaigns in Jamaica, places emphasis as well upon other phases of the public-health program, especially in relation to their development following successful antihookworm work. In 1926 "The Jamaica hookworm commission, in the campaigns conducted by its two units in the parishes of St. Mary, St. Andrew, and Portland, examined 20,591 persons for intestinal parasites. Of these, 15,569 (76 per cent) were found to be infected with hookworms; 38,459 treatments were administered to 13,236 patients; and 10,675 of those treated were cured. Treatment campaigns are conducted only in areas which have been sanitated. The sanitation staff supervised the erection of 4,106 sanitary privies of standard type during the year. The success of these campaigns has been of assistance to the Government by developing a general interest in the establishment of a permanent island-wide system of active public-health work."

The "intensive method" of Howard is employed in the antihookworm work. Laboratory examinations are made by Willis salt floatation, with the dilution egg counting method used to find out the degree of infection in about 10 per cent of the cases. Treatment consists of oil of chenopodium as first drug and thymol a week later. These drugs are given in capsule form.

The Jamaica hookworm commission began work in 1919. The results to date have "shown eight things in an unmistakable manner: (1) That hookworm disease is prevalent in all parts of Jamaica and that the disease is an important economic factor in the life of the Colony; (2) that hookworm disease can be controlled by treatment and sanitation. In the Vere area the percentage of infection was reduced from 48 to 6 per cent; (3) that all diseases, but especially typhoid and dysentery, are decreased in prevalence following a hookworm campaign; (4) that treatment for hookworm disease results in a noticeable increase in the working capacity of individual laborers; (5) that rural Jamaicans, as well as those living in the towns, are eager to learn about disease prevention and will attend health lectures and demonstrations in great numbers. More than 99.8 per cent of the population (more than 110,000 people) of the areas covered by the hookworm campaigns cooperated and were examined; (6) that hookworm control and the maintenance of a system of sanitary latrines have a marked financial value. The Lionel Town Hospital had, during 1918 and 1919, an average daily number of patients, from all causes, of 78. Following the hookworm campaign in the district during 1920 this average daily number dropped to 72 in 1920, to 57 in 1921, to 52 in 1922, and to 45 in 1923; (7) that hookworm disease retards the advancement of school children, while treatment makes them more efficient in their school work; (8) that the people can be educated and made willing to cooperate in sanitary campaigns."

Investigations of Chemical Reactions Involved in Water Purification. A. M. Buswell, et al. (1920–1925.) Illinois State Water Survey, Urbana, Ill. Bulletin No. 22, pp. 1–133.

"The investigations were carried out by four workers, each reporting his results in a thesis for an advanced degree in chemistry in the University of Illinois. * * * It is believed that these investigations, together with those carried on in other laboratories during the last five years, have definitely established several important points: (1) The amounts of residual alum in filtered water under ordinary conditions are inconsequential and are never sufficient to cause any physiological effect. No economic loss can be inferred from the presence of such slight traces of alum in distribution mains; (2) the saving that results from adjusting the pH to an optimum point is due to the greater efficiency of the alum used rather than to the prevention of unused alum going into the distribution mains. This efficiency consists largely in the formation of better alum floc, which is the first prerequisite in the purification process. It is, therefore, generally desirable to adjust the hydrogen-ion concentration of a natural water to an optimum point; (3) the optimum point is not the same for all waters and can be determined in a given case only by taking account of all the factors (physical as well as chemical) entering into the purification process and by considering all the circumstances of the case. An operator may find that the optimum point for his plant varies with seasonal changes in temperature, turbidity, hardness, and other factors; (4) the use of pH determinations in the operation of a filter plant affords a guide to more efficient results only when there is no confusion of purposes. For example, other things being equal, pH 5.5 may afford most rapid formation of floc, pH 6.2 may be most effective for removal of color, pH 5.9 to 6.8 may give least residual alum, and pH 7.1 may be best for removal of turbidity. It is, therefore, unwise to attempt to accomplish too many different purposes at one time. Separate treatment may yield better results; (5) the great complexity of the reactions involved in water purification is just beginning to be appreciated. Progress requires the utmost cooperation of engineers, chemists, and operators in the handling of problems of design and dosage. Great econo-

mies are yet to be effected. Continued research, looking toward solutions of these problems, is indispensable from the point of view of the general public."

A bibliography of 130 references is included.

New Water Supply of Kinston, N. C. John E. Weyher. *Public Works*, vol. 58, No. 3, March, 1927, pp. 93–94. (Abstract by R. J. Faust.)

In 1922, Kinston, N. C., a city of 12,000 population, felt the need of augmenting their well-water supply. Naturally they turned to wells and drilled two 8-inch wells to a depth of 350 feet, with a resulting capacity of 150 gallons per minute. Pumping of these wells damaged several adjacent artesian wells not owned by the city and resulted in a lawsuit and judgment against the city. The total cost to the city of developing this supply was $65,000.

In 1925 a Layne & Bowler well was constructed with a 38-inch outer casing, a 24-inch central casing, and an 18-inch inner casing, set to 90, 190, and 300 feet depths, respectively. This well produced 871 gallons per minute by test with a 46-foot draw-down. The total cost to the city was $29,000.

The success of the latter well assured Kinston of a ground-water supply and prevented the installation of a water-filtration plant.

Trained Personnel Versus "Hired Hands" Method of Filter Plant Operation. G. F. Catlett. Proceedings Ninth Texas Water Works Short School. January 24–29, 1927, pp. 109–113. (Abstract by E. S. Tisdale.)

Operation and supervision are frequently the weakest features of the modern water-purification plant. The influence, "for better or for worse," of the commercial companies in the early days with regard to design and operation is mentioned. Marked progress has been made in the past few years in putting water-purification on a scientific basis. The State of North Carolina is taken as an example to show the deplorably bad conditions which existed before the sanitary engineering division of the State health department started its improvement program and the remarkable betterment which has resulted in both design and operation of water-treatment plants in the last eight years through a cooperative educational program carried on by the State health department. Specifications of a thoroughly competent filter-plant superintendent are given. Since the demand for trained men in North Carolina exceeded the supply, a systematic plan of developing men for this type of work was undertaken by the State health department. Personal visits to the filter plant, where instructions were given, were more productive of results than instructions by correspondence and annual meetings of filter-plant operators, although these systems also are used to bring about improvement in operating practice.

A trained operator has almost competely superseded the "hired help" type in North Carolina. A trained man obtains better efficiency from his plant, produces a water which is safe at all times, and does not allow his filter-plant equipment to depreciate so rapidly. The plan pays dividends from every standpoint.

Supervising Water Improvements in California. C. G. Gilespie. Proceedings Ninth Texas Water Works Short School. January 24–29, 1927, pp. 115–120. (Abstract by E. S. Tisdale.)

This paper summarizes the efforts of the State of California to safeguard public water supplies. Reduced funds have made necessary a curtailment of this much-needed work. Only 25 per cent of the time of the engineering bureau of the State health department can be devoted to public water supply supervision. The disinfection of all public supplies, which was adopted about 1915, accounted for a marked drop in the typhoid death rate from 13.3 to 2.9 per 100,000.

Sewage-disposal problems constitute a major activity of the sanitary engineering division, only a minimum amount of time being available to supervise waterworks over the State. The development of a fine spirit of devotion and conscientiousness in their work by waterworks operators, which spirit has been fostered by the State sanitary engineers, is the key to the good water furnished by the plants. It has been found that orthotolidin outfits for the control of free chlorine are a big help in holding disinfection within proper limits.

Effect of Certain Factors on the Behavior of Digestion Tanks. Willem Rudolfs. Proceedings of Ninth Texas Water Works Short School, pp. 356–366. (Abstract by H. H. Rashid.)

In order to eliminate odor and avoid impairing digestion, certain facts should be taken into consideration. The freshness of sewage is of primary importance, as the decomposition of soluble materials gives rise to a variety of compounds, including organic acids, which are broken down further by the proper bacteria already present in sewage but not in sufficient numbers to take care of the acids as rapidly as they are produced. When stale sewage thus enters the tank, the microorganisms responsible for the decomposition of these acids are partially inhibited by the acid accumulation. In a new tank started without seed material (ripe sludge), foaming may occur at the outlet and where most finer particles are deposited. When a tank is overloaded, a complete rest is indispensable.

Periodical drawing of sludge in order to keep the ratio between ripe sludge and fresh solids does not greatly disturb the biological balance, and the proper course is to draw the sludge continuously and in proportion to the incoming fresh solids. Calculation shows that the effective sludge capacity of a tank should be a minimum of 2.6 to 2.8 cubic feet per capita, but with an efficient system of sludge removal this can be reduced to 1.4 to 1.5. Formation of scum is due to slight acidity of the tank, and the trouble is overcome by the addition of lime, while the addition of acid (alum) causes the poor sludge to float so that it can be drained and dried rapidly. The breaking and hosing of scum brings only a temporary and short relief, while stirring is beneficial, inasmuch as it effects thorough mixing of the finely divided material. Too much stirring, however, is detrimental. The exclusion of air which is introduced by submerging scum is essential, as the active organisms are anaerobic, and the decomposition products of both aerobic and anaerobic organisms are quite often detrimental to the activities of each other. Separate sludge digestion is undoubtedly the next step in sewage disposal; it is easier to operate, and less expensive. The digestion of activated sludge is practicable, but the proper optimum conditions for activated sludge have yet to be determined. Lime speeds up the rate of digestion, prevents scum, and increases the sludge digestion capacity, while artificial heat is not an economical proposition. Mr. John R. Downes, in discussing the problem of freshness of solids, asserts that the accumulation of acids in stale sewage brings down the pH. below 7.0, or even more, with the result of digestion troubles. Sufficient tank area to maintain constant balance of ripe sludge and fresh sewage is essential, while periodical reversal of flow of sewage perfects distribution. Black froth, due to the accumulation of ripe sludge and increase in alkalinity, is eliminated by drawing the sludge, while gray acid foam, due to acid decomposition products, is avoided by the addition of lime. Heating of separate sludge digestion tanks is economically accomplished by placing a heating coil in the sludge where the sludge at the bottom will take a uniform temperature dependent upon the quantity of heat.

Recent Improvements and Criticisms of Imhoff Tanks. Dr. Karl Imhoff. Proceedings of Ninth Texas Water Works Short School, pp. 369–371. (Abstract by H. H. Rashid.)

The upper part of the sedimentation chamber should be given the largest surface area, because depths of over 6 feet can not be included in the computation of the detention period. One hour detention period is enough, but longer periods may be desirable, especially when contact aerators will be provided for. The sludge digestion chamber should be as deep as possible, but should have a minimum of water surface.

Gas traps should be built in all large Imhoff tank installations. The construction costs are very slight as the already present slant partition walls for the separation of the sedimentation chamber from the sludge digestion serve as gas retainers. The amount of gas is about 8 liters per head per day, which can be increased at higher temperature to threefold. Imhoff tanks the septic chambers of which have become too small may be provided with secondary sludge digestion tanks into which the half digested sludge can be pumped. In the meantime, the sludge from the secondary tank is allowed to return into the Imhoff tank. In winter there is the additional advantage that the cold separate sludge digestion chamber is heated by the warm Imhoff sludge. Contact aerators (that is to say, submerged structures into which air is supplied from below) have, to date, proved themselves very economical. The disadvantages of Imhoff tanks as compared with the single story sludge digestion tanks are, briefly, as follows: Construction is deeper, forming during the ripening period or later damages the stabilization, and the impossibility of artificially heating the septic chamber. Among the advantages are the following: The automatic continuous flow of sludge from sedimentation chambers; the even distribution of fresh sludge into septic chambers; the septic chambers are naturally kept warm by the flowing effluent; the installation of gas traps is cheaper, owing to the presence of slanted partitions; the relatively small amount of CO_2 in the gas; and the simplicity of operation.

Sewage Investigation at the New Jersey Agricultural Experiment Station. Willem Rudolfs. Proceedings of Ninth Texas Water Works Short School, pp. 352–355. (Abstract by H. H. Rashid.)

The agricultural experiment station of New Jersey is conducting an investigation of the biology of sewage disposal. The results already obtained disclose that the number of digestive bacteria in sludge does not increase in proportion to the concentration of solids. Therefore, there must be established and maintained the optimum number of organisms dealing with the proper decomposition process. The optimum digestion (liquefaction) takes place at a definite reaction—pH 7.3 to 7.6. The addition of a small quantity of salts precipitates sewage solids and aids digestion. Small quantities of chemicals are likewise beneficial to adjust the relative activity of bacteria and protozoa, from both the stimulating and inhibiting points of view. The groups of bacteria responsible for liquefaction are hampered by air, and sealing tanks are desirable. The addition of alum helps de-watering, and the determination of protozoa and pH as an index of tank behavior is practicable and simple. Temperature affects sludge digestion markedly. The optimum temperature is around 80° F. The increase of temperature in the sludge digestion tank from 58° F. to 80° F. reduces the time for digestion by nearly one-half. Among other results not yet published are the effect of length of Imhoff tanks on the chemical composition of sludge, the effect of trade waste on sludge digestion, simulation of protozoa by bacteria, filter fly study, and the use of catalyzers. In addition to these problems there are several others designed for gaining information and developing more effective methods for sewage purification which will be undertaken in the future.

Disposal of Trade Sewage. C. H. Currie. Municipal and County Engineering, vol. 72, No. 5, May, 1927, pp. 249–251. (Abstract by Arthur P. Miller.)

The writer points out the importance of proper disposal of trade sewage, indicating that this phase of sanitation is becoming more and more necessary. One of the most serious problems in trade waste sewages is the nature and concentration of these wastes. Until lately, little has been known of the various chemical and biological activities taking place in trade wastes, but more recently continued study of the different lines of this work has shown that each trade sewage presents an individual problem in itself.

Three general ways of handling trade sewage are as follows: (1) By fine screening, followed by sufficient dilution to prevent undue stream pollution; (2) partial treatment to destroy acid-forming bacteria or so to change the trade sewage as to make it equivalent to ordinary domestic sewage, thereby permitting it to be run into the municipal sewer systems; (3) complete treatment of trade sewage so that the effluent can be wasted into any stream or storm sewer.

The writer devotes some space to pointing out the fact that it is ill advised to force a part-time industry to spend so much on trade sewage treatment as to cause that industry either to abandon its work or to move to another locality.

Study of each particular problem will probably reveal methods of treating wastes which will be economically possible. For example, a particular sugar beet company experimented with trickling beds of stone for producing a stable effluent. One of the materials used in the beds was crushed granite, the cost of which for a complete plant would have been $90,000, and another material was cinders, the similar cost of which would have been only $20,000. If the cinders prove to be as satisfactory as granite and also fulfill the other requirements, there will be saved, approximately, $70,000.

Combination Waterworks and Sewage Disposal Plant Operators. E. W. Steel. Proceedings of Ninth Texas Water Works Short School, pp. 113–115. (Abstract by E. S. Tisdale.)

In Texas, as in other States, sewage disposal plant troubles are due primarily to poor operation, because in many instances untrained and uneducated persons are charged with the supervision of such plants.

It is recommended that some of the scientific knowledge and the sense of responsibility of the waterworks superintendent be utilized to correct this trouble. In many cities, by giving the waterworks superintendent an assistant and making him responsible for sewage plant supervision, this problem might be solved. Three simple tests for the control of sewage treatment plants are briefly described. A plea is entered for keeping operation records and for operating more intelligently all sewage treatment plants.

DEATHS DURING WEEK ENDED AUGUST 27, 1927

Summary of information received by telegraph from industrial insurance companies for week ended August 27, 1927, and corresponding week of 1926. (From the Weekly Health Index, August 31, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Aug. 27, 1927	Corresponding week 1926
Policies in force	66, 922, 144	65, 161, 176
Number of death claims	10, 508	10, 210
Death claims per 1,000 policies in force, annual rate	8. 2	8. 2

***Deaths from all causes in certain large cities of the United States during the week ended August 27, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926.** (From the Weekly Health Index, August 31, 1927, issued by the Bureau of the Census, Department of Commerce)*

City	Week ended Aug. 27, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Aug. 27, 1927 [2]
	Total deaths	Death rate [1]		Week ended Aug. 27, 1927	Corresponding week 1926	
Total (65 cities)	5,357	10.0	[3] 10.2	630	[3] 724	[4] 56
Akron	37			1	8	11
Albany [5]	33	14.3	8.3	4	1	83
Atlanta	62			9	13	
White	30			6	4	
Colored	32	(6)		3	9	
Baltimore [5]	180	11.6	10.8	29	25	90
White	130		9.5	22	17	85
Colored	50	(6)	18.4	7	8	109
Birmingham	65	15.8	13.8	16	13	
White	28		13.9	8	7	
Colored	7	(6)	13.8	8	6	
Boston	166	10.9	12.3	26	45	73
Bridgeport	21			4	3	74
Buffalo	108	10.2	11.4	17	8	71
Cambridge	21	8.8	7.7	2	3	36
Camden	29	11.1	9.2	3	7	52
Canton	32	14.8	10.0	6	4	142
Chicago [5]	568	9.6	9.1	50	61	43
Cincinnati	116	14.7	16.4	11	15	69
Cleveland	164	8.7	9.0	26	21	69
Columbus	70	12.5	11.7	8	10	74
Dallas	24	6.0	10.0	3	8	
White	15		8.3	1	8	
Colored	9	(6)	21.2	2	0	
Dayton	31	9.0	11.2	4	0	66
Denver	77	13.8	11.3	7	8	
Des Moines	27	9.4	5.7	6	2	100
Duluth	16	[illegible] 3	9.7	1	2	22
El Paso	[illegible]	10.1	11.0	7	3	
Erie	20			2	2	39
Fall River [5]	17	6.7	9.6	4	2	71
Flint	24	8.8	6.5	7	5	114
Fort Worth	23	7.3	8.2	2	5	
White	18		8.2	1	5	
Colored	5	(6)	8.2	1	0	
Grand Rapids	21	6.9	6.4	1	0	15
Houston	53			5	2	
White	34			3	2	
Colored	19	(6)		2	0	
Indianapolis	74	10.3	13.1	11	12	86
White	63		11.8	10	8	90
Colored	11	(6)	22.5	1	4	61
Jersey City	61	9.9	6.6	9	4	67
Kansas City, Kans	26	11.6	9.4	1	0	19
White	21		9.2	1	0	22
Colored	5	(6)	10.2	0	0	0
Kansas City, Mo	83	11.3	11.8	11	13	
Knoxville	21	10.7		0		
White	19			0		
Colored	2	(6)		0		
Los Angeles	199			17	15	49
Louisville	69	11.2	12.4	7	9	60
White	50		10.7	5	7	49
Colored	16	(6)	22.2	2	2	140
Lowell	30	14.2	8.5	6	2	116
Lynn	31	15.4	7.5	3	2	79
Memphis	63	18.4	18.0	4	9	
White	36		13.3	2	5	
Colored	27	(6)	26.5	2	4	
Milwaukee	98	9.6	7.5	7	16	33
Minneapolis	73	8.6	11.1	7	9	39
Nashville [5]	38	14.4	20.9	4	8	
White	19		18.1	1	6	
Colored	19	(6)	28.1	3	2	
New Bedford	20	8.7	13.5	1	5	17
New Haven	22	6.2	15.2	2	5	28

(Footnotes at end of table)

Deaths from all causes in certain large cities of the United States during the week ended August 27, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, August 31, 1927, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended Aug. 27, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Aug. 27, 1927
	Total deaths	Death rate		Week ended Aug. 27, 1927	Corresponding week 1926	
New Orleans	125	15.4	18.3	14	17	--------
White	71	--------	12.8	6	5	--------
Colored	54	(6)	34.0	8	12	--------
New York	1,008	8.8	9.1	113	126	47
Bronx Borough	122	6.9	7.1	8	10	25
Brooklyn Borough	349	8.0	7.9	54	54	56
Manhattan Borough	390	11.2	11.8	41	45	48
Queens Borough	109	7.0	7.0	8	16	34
Richmond Borough	33	13.5	16.0	2	1	37
Newark, N. J	89	11.0	11.5	10	25	50
Oakland	51	10.0	8.6	2	7	23
Oklahoma City	25	--------	--------	2	3	--------
Omaha	47	11.2	12.8	6	6	67
Paterson	29	10.5	6.6	4	3	71
Philadelphia	359	9.2	9.2	47	40	63
Pittsburgh	134	10.9	12.0	28	23	98
Portland, Oreg	43	--------	--------	8	2	84
Providence	50	9.3	10.0	4	7	34
Richmond	37	10.0	11.9	2	12	26
White	25	--------	9.3	2	4	40
Colored	12	(6)	18.0	0	8	0
Rochester	54	8.7	10.4	10	5	84
St. Louis	124	7.7	9.9	9	21	--------
St. Paul	34	7.1	8.6	2	1	18
Salt Lake City [5]	25	9.6	11.4	2	0	30
San Antonio	61	15.1	11.4	8	6	--------
San Diego	39	17.7	13.7	4	1	85
San Francisco	140	12.7	10.7	10	8	62
Schenectady	18	10.1	13.5	4	6	119
Seattle	50	--------	--------	2	4	21
Somerville	18	9.2	9.9	2	6	72
Spokane	18	8.6	8.1	1	4	25
Springfield, Mass	20	7.1	10.1	1	3	15
Syracuse	39	10.3	12.1	3	3	39
Toledo	48	8.2	9.2	6	7	58
Trenton	31	11.8	12.1	2	4	35
Washington, D. C	93	9.0	10.8	5	15	29
White	58	--------	9.5	4	7	34
Colored	35	(6)	14.4	1	8	18
Waterbury	16	--------	--------	4	5	94
Wilmington, Del	24	9.9	7.6	3	4	74
Worcester	56	15.0	10.0	8	9	96
Yonkers	18	7.9	6.7	1	2	23
Youngstown	25	7.7	12.3	6	11	84

1 Annual rate per 1,000 population.
2 Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
3 Data for 64 cities.
4 Data for 60 cities.
5 Deaths for week ended Friday, Aug. 26, 1927.
6 In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended September 3, 1927

DIPHTHERIA	Cases
Alabama	48
Arkansas	15
California	92
Colorado	14
Connecticut	8
Florida	13
Georgia	43
Illinois	84
Indiana	17
Iowa [1]	9
Kansas	11
Louisiana	23
Maine	1
Maryland [1]	34
Massachusetts	35
Michigan	46
Minnesota	29
Mississippi	25
Missouri	10
Montana	6
Nebraska	1
New Jersey	49
New Mexico	3
New York [2]	54
North Carolina	78
Oklahoma [3]	27
Oregon	9
Pennsylvania	170
Rhode Island	5
South Carolina	40
South Dakota	4
Tennessee	15
Texas	32
Utah [1]	5
Washington	18
West Virginia	22
Wisconsin	23

INFLUENZA	Cases
Alabama	6
Arkansas	34
California	5
Connecticut	2
Florida	5
Georgia	18
Illinois	3
Indiana	7
Kansas	2
Louisiana	11
Maryland [1]	3
Massachusetts	9
New Jersey	9
Oklahoma [3]	14
Oregon	6
South Carolina	170
Tennessee	14
Texas	30
Utah [1]	2
West Virginia	1
Wisconsin	9

MEASLES	
Alabama	9
Arizona	1
Arkansas	8
California	25
Colorado	3
Connecticut	4
Delaware	2
Florida	6
Georgia	9
Illinois	12
Indiana	6
Iowa [1]	2
Kansas	10
Louisiana	4

[1] Week ended Friday. [2] Exclusive of New York City. [3] Exclusive of Oklahoma City and Tulsa.

MEASLES—continued	Cases
Maine	6
Maryland [1]	9
Massachusetts	29
Michigan	11
Minnesota	4
Missouri	9
Montana	1
Nebraska	1
New Jersey	6
New Mexico	2
New York [2]	22
North Carolina	134
Oklahoma [3]	10
Oregon	10
Pennsylvania	104
Rhode Island	1
South Carolina	37
South Dakota	3
Tennessee	49
Texas	6
Utah [1]	2
Washington	29
West Virginia	7
Wisconsin	66

MENINGOCOCCUS MENINGITIS	
Alabama	1
California	1
Florida	1
Illinois	6
Massachusetts	1
Michigan	1
Missouri	1
North Carolina	1
Oklahoma [3]	1
Oregon	1
Pennsylvania	4
Tennessee	3
West Virginia	1
Wisconsin	5

POLIOMYELITIS	
Arkansas	1
California	58
Colorado	1
Connecticut	19
Delaware	1
Florida	1
Georgia	3
Illinois	25
Indiana	7
Iowa [1]	3
Kansas	9
Louisiana	1
Maine	6
Massachusetts	60
Michigan	15
Minnesota	9
Mississippi	1
Missouri	6
Nebraska	3
New Jersey	23
New Mexico	5
New York [2]	19
North Carolina	3

POLIOMYELITIS—continued	Cases
Ohio [4]	73
Oklahoma [3]	5
Oregon	7
Pennsylvania	49
Rhode Island	2
South Carolina	2
South Dakota	1
Texas	28
Utah [1]	1
Washington	7
West Virginia	16
Wisconsin	4

SCARLET FEVER	
Alabama	19
Arizona	2
Arkansas	5
California	36
Colorado	11
Connecticut	3
Delaware	1
Florida	2
Georgia	16
Illinois	74
Indiana	28
Iowa [1]	10
Kansas	43
Louisiana	3
Maine	13
Maryland [1]	14
Massachusetts	69
Michigan	87
Minnesota	32
Mississippi	15
Missouri	32
Montana	8
Nebraska	15
New Jersey	19
New Mexico	8
New York [2]	39
North Carolina	35
Oklahoma [3]	12
Oregon	5
Pennsylvania	114
Rhode Island	7
South Carolina	14
South Dakota	4
Tennessee	26
Texas	25
Utah [1]	2
Vermont	8
Washington	11
West Virginia	46
Wisconsin	47
Wyoming	8

SMALLPOX	
Alabama	1
California	7
Florida	4
Illinois	4
Indiana	12
Iowa [1]	2
Michigan	23

[1] Week ended Friday.
[2] Exclusive of New York City.
[3] Exclusive of Oklahoma City and Tulsa.
[4] Week ended Sept. 6.

SMALLPOX—continued

	Cases
Missouri	4
North Carolina	6
Oklahoma [3]	11
Oregon	9
South Carolina	5
South Dakota	3
Texas	1
Utah [1]	5
Washington	10
West Virginia	8
Wisconsin	11

TYPHOID FEVER

	Cases
Alabama	91
Arizona	3
Arkansas	67
California	9
Colorado	13
Connecticut	3
Delaware	3
Florida	8
Georgia	119
Illinois	53
Indiana	10
Iowa [1]	4
Kansas	20
Louisiana	44

TYPHOID FEVER—continued

	Cases
Maine	9
Maryland [1]	37
Massachusetts	13
Michigan	25
Minnesota	2
Mississippi	82
Missouri	24
Montana	3
Nebraska	4
New Jersey	16
New Mexico	10
New York [2]	21
North Carolina	58
Oklahoma [3]	94
Oregon	9
Pennsylvania	96
Rhode Island	7
South Carolina	104
South Dakota	2
Tennessee	74
Texas	22
Utah [1]	5
Washington	8
West Virginia	57
Wisconsin	7
Wyoming	1

Reports for week ended August 27, 1927

DIPHTHERIA

	Cases
District of Columbia	2
North Dakota	2

INFLUENZA

	Cases
District of Columbia	1

MEASLES

	Cases
North Dakota	5

POLIOMYELITIS

	Cases
District of Columbia	1
North Dakota	2

SCARLET FEVER

	Cases
District of Columbia	3
North Dakota	25

TYPHOID FEVER

	Cases
District of Columbia	5

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
July, 1927										
Kansas	4	35	30	1	205	1	15	102	41	59
Maine	0	13	3		163		0	88	0	6
Mississippi	1	43	821	10,580	468	2,389	2	30	18	321
Montana	9	7	8		25		3	47	11	17
New Hampshire		11	49				1	20	0	1
New York	19	1,142		30	1,383		38	766	28	107
North Carolina	1	62			1,481		1	71	46	331
Oregon	5	41	48	4	274		2	33	55	23
Virginia	5	76	439	183	363	73	0	73	27	272
Washington	5	65	20		677		1	80	125	25

[1] Week ended Friday. [2] Exclusive of New York City. [3] Exclusive of Oklahoma City and Tulsa.

July, 1927

Chicken pox:	Cases
Kansas	46
Maine	44
Mississippi	155
Montana	23
New York	1,246
North Carolina	58
Oregon	50
Virginia	118
Washington	125
Dengue:	
Mississippi	12
Dysentery:	
Mississippi (amoebic)	101
Mississippi (bacillary)	1,542
New York	8
Oregon	1
Virginia	819
Washington	1
German measles:	
Kansas	8
Maine	26
Montana	4
New York	165
North Carolina	8
Washington	66
Hookworm disease:	
Mississippi	384
Virginia	10
Impetigo contagiosa:	
Oregon	7
Lethargic encephalitis:	
Montana	1
New York	8
Oregon	2
Washington	8
Mumps:	
Kansas	50
Maine	10
Mississippi	253
Montana	3
New York	842
Oregon	23
Washington	71
Ophthalmia neonatorum:	
Maine	1
Mississippi	11
New York	10
North Carolina	2

Paratyphoid fever:	Cases
Kansas	13
New York	4
Oregon	3
Poliomyelitis:	
Mississippi	2
Puerperal septicemia:	
Mississippi	28
New York	11
Rabies in animals:	
Mississippi	12
New York	5
Oregon	1
Rabies in man:	
Mississippi	1
Rocky Mountain spotted or tick fever:	
Montana	3
Oregon	1
Scabies:	
Oregon	4
Septic sore throat:	
Kansas	1
Maine	1
Montana	4
New York	7
North Carolina	2
Oregon	6
Tetanus:	
Kansas	2
Maine	2
New York	23
Trachoma:	
Mississippi	4
Oregon	2
Tularaemia:	
Montana	2
Vincent's angina:	
Kansas	3
Maine	6
New York	54
Whooping cough:	
Kansas	403
Maine	148
Mississippi	1,122
Montana	59
New York	1,342
North Carolina	1,432
Oregon	58
Virginia	966
Washington	107

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 99 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 29,530,000. The estimated population of the 93 cities reporting deaths is more than 28,860,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended August 20, 1927, and August 21, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
42 States	985	769	
99 cities	454	352	469
Measles:			
41 States	804	1,158	
99 cities	191	244	
Poliomyelitis:			
42 States	317	109	
Scarlet fever:			
42 States	936	957	
99 cities	277	263	225
Smallpox:			
42 States	177	130	
99 cities	26	13	23
Typhoid fever:			
42 States	1,051	1,474	
99 cities	215	228	211
Deaths reported			
Influenza and pneumonia:			
93 cities	276	320	
Smallpox:			
93 cities	0	0	

City reports for week ended August 20, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	0	1	1	0	0	0	0	0
New Hampshire:									
Concord	22,546	0	0	0	0	0	0	0	1
Manchester	83,097	0	0	0	0	1	0	0	0
Vermont:									
Barre	10,008	0	0	0	0	0	0	0	0
Massachusetts:									
Boston	779,620	8	28	32	1	0	30	5	14
Fall River	128,993	0	2	2	1	0	1	1	1
Springfield	142,065	0	1	0	0	0	1	2	0
Worcester	190,757	0	3	2	0	0	0	0	0
Rhode Island:									
Pawtucket	69,760	0	0	1	0	0	0	0	1
Providence	267,918	0	3	6	0	0	1	0	0
Connecticut:									
Bridgeport	(1)	0	3	3	1	1	0	0	2
Hartford	160,197	0	3	1	1	0	1	0	0
New Haven	178,927	0	2	0	0	0	2	0	2

[1] No estimate made.

City reports for week ended August 20, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	4	10	12		0	15	3	5
New York	5,873,356	12	92	105	8	4	15	10	49
Rochester	316,786	0	4	5		0	1	0	1
Syracuse	182,003	1	2	1		0	9	1	0
New Jersey:									
Camden	128,642	1	2	4	0	0	0	0	1
Newark	452,513	5	5	5	2	0	1	9	3
Trenton	132,020	0	2	2	0	0	0	0	1
Pennsylvania:									
Philadelphia	1,979,364	3	32	38		1	1	20	15
Pittsburgh	631,563	0	11	17		0	23	1	18
Reading	112,707	1	2	1		0	5	0	2
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	0	6	2	0	1	0	1	8
Cleveland	936,485	4	19	25	1	0	1	14	5
Columbus	279,836	0	2	2	0	0	0	0	0
Toledo	287,380	0	5	0	0	0	0	4	1
Indiana:									
Fort Wayne	97,846	0	1	1	0	0	0	0	2
Indianapolis	358,819	3	3	7	0	0	1	2	7
South Bend	80,091	0	0	0	0	0	0	0	0
Terre Haute	71,071	0	1	0	0	0	0	0	1
Illinois:									
Chicago	2,995,239	32	46	57	3	2	11	13	14
Springfield	63,923	0	1	0	0	0	0	0	0
Michigan:									
Detroit	1,245,824	3	31	23	1	0	0	4	7
Flint	130,316	1	4	1	0	0	0	0	4
Grand Rapids	153,698	2	2	0	0	0	2	2	2
Wisconsin:									
Kenosha	50,891	0	1	0	0	0	0	2	0
Madison	46,385	0	1	0	0	0	0	1	1
Milwaukee	509,192	4	8	7	0	0	4	4	2
Racine	67,707	0	1	0	0	0	0	0	0
Superior	39,671	0	1	2	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	0	0	0	0	0	0	0	0
Minneapolis	425,435	9	13	1	0	0	2	0	2
St. Paul	246,001	3	11	5	0	0	1	0	5
Iowa:									
Davenport	52,469	0	1	1	0		0	0	
Des Moines	141,441	0	2	1	0		0	0	1
Sioux City	76,411	0	1	0	0		3	0	
Waterloo	36,771	0	0	0	0		0	0	
Missouri:									
Kansas City	367,481	0	2	4	0	0	1	1	2
St. Joseph	78,342	1	0	0	0	0	0	0	0
St. Louis	821,543	1	19	9	0	0	2	4	
North Dakota:									
Fargo	26,403	0	1	0	0	0	0	0	0
Grand Forks	14,811	0	1	0	0		0	0	
South Dakota:									
Aberdeen	15,036	1	0	1	0		0	1	
Sioux Falls	30,127	0	0	0	0		0	0	
Nebraska:									
Lincoln	60,941	2	1	1	0	0	1	2	1
Omaha	211,768	0	5	0	0	0	0	0	2
Kansas:									
Topeka	55,411	1	1	2	0	0	2	0	0
Wichita	88,367	0	1	1	0	0	0	1	1

City reports for week ended August 20, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria: Cases, estimated expectancy	Diphtheria: Cases reported	Influenza: Cases reported	Influenza: Deaths reported	Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
SOUTH ATLANTIC									
Delaware:									
Wilmington	122, 049	0	1	0	0	0	0	0	0
Maryland:									
Baltimore	796, 296	1	12	16	0	0	3	5	10
Cumberland	33, 741	0	0	0	0	0	0	0	0
Frederick	12, 035	0	0	0	0	0	0	0	0
District of Columbia:									
Washington	497, 906	2	4	8	1	0	1	0	4
Virginia:									
Lynchburg	30, 395	0	1	2	0	0	0	0	0
Norfolk	(1)	0	1	0	0	0	0	0	2
Richmond	186, 403	0	6	0	0	0	1	0	2
Roanoke	58, 208	2	2	1	0	0	0	0	1
West Virginia:									
Charleston	49, 019	0	1	0	0	1	0	0	0
Wheeling	56, 208	0	0	0	0	0	0	0	1
North Carolina:									
Raleigh	30, 371	1	0	0	0	0	0	0	0
Wilmington	37, 061	0	0	0	0	0	2	0	0
Winston-Salem	69, 031	0	1	0	0	0	2	4	1
South Carolina:									
Charleston	73, 125	0	1	0	6	0	0	0	4
Columbia	41, 225	0	1	2	0	------	4	0	------
Greenville	27, 311	0	0	0	0	0	0	0	1
Georgia:									
Atlanta	(1)	1	2	5	4	2	1	0	2
Brunswick	16, 809	0	0	0	0	0	0	0	0
Savannah	93, 134	0	0	0	3	0	1	0	0
Florida:									
Miami	69, 754	0	------	2	1	0	0	0	0
St. Petersburg	26, 847	------	0	------	------	0	------	------	0
Tampa	94, 743	0	1	0	0	0	0	0	1
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58, 309	0	0	1	0	0	0	0	0
Lexington	46, 895	0	------	0	0	0	0	0	0
Louisville	305, 935	0	2	0	0	0	0	0	3
Tennessee:									
Memphis	174, 533	0	3	3	0	0	1	0	1
Nashville	136, 220	0	1	2	0	0	0	0	2
Alabama:									
Birmingham	205, 670	0	2	4	2	1	0	1	6
Mobile	65, 955	0	0	0	0	1	0	0	1
Montgomery	46, 481	3	0	0	0	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31, 643	0	0	0	0	------	0	2	------
Little Rock	74, 216	0	1	0	0	0	3	0	1
Louisiana:									
New Orleans	414, 493	0	5	6	10	7	1	0	6
Shreveport	57, 857	1	1	0	0	0	5	0	1
Oklahoma:									
Oklahoma City	(1)	0	1	3	1	0	0	0	2
Tulsa	124, 478	0	------	1	0	------	0	1	------
Texas:									
Dallas	194, 450	0	3	6	0	0	0	0	1
Galveston	48, 375	0	0	0	[illegible]	0	0	0	0
Houston	164, 954	0	2	5	0	0	0	0	1
San Antonio	198, 069	0	0	1	0	0	1	0	6
MOUNTAIN									
Montana:									
Billings	17, 971	0	0	0	0	0	0	0	0
Great Falls	29, 883	0	1	0	0	0	0	0	0
Helena	12, 037	0	0	0	0	0	0	0	1
Missoula	12, 668	0	0	0	0	0	0	0	0

[1] No estimate made.

City reports for week ended August 20, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria: Cases, estimated expectancy	Diphtheria: Cases reported	Influenza: Cases reported	Influenza: Deaths reported	Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
MOUNTAIN—continued									
Idaho:									
Boise	23,042	1	0	0	0	0	0	1	0
Colorado:									
Denver	280,911	5	9	3		0	0	1	2
Pueblo	43,787	0	2	0	0	0	1	0	0
New Mexico									
Albuquerque	21,000	0	0	0	0	0	0	0	0
Utah.									
Salt Lake City	130,948	8	2	2	0	0	1	4	1
Nevada:									
Reno	12,665	0	0	1	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	(1)	2	3	1	0		17	3	
Spokane	108,897	0	2	0	0		0	0	
Tacoma	104,455	1	1	0	0	0	1	0	2
Oregon									
Portland	282,383	0	4	5	0	0	1	0	5
California									
Los Angeles	(1)	3	25	18	2	0	2	3	13
Sacramento	72,260	1	2	0	0	0	2	0	0
San Francisco	557,530	9	13	4	0	0	5	3	6

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
NEW ENGLAND											
Maine:											
Portland	0	0	0	0	0	0	1	0	0	0	13
New Hampshire.											
Concord	0	0	0	0	0	0	0	0	0	0	11
Manchester	0	1	0	0	0	2	0	0	0	0	24
Vermont.											
Barre	0	0	0	0	0	3	0	0	0	0	7
Massachusetts											
Boston	15	16	0	0	0	8	3	4	1	23	192
Fall River	1	0	0	0	0	3	1	1	0	1	16
Springfield	1	0	0	0	0	0	0	3	0	2	25
Worcester	2	2	0	0	0	2	0	0	0	3	36
Rhode Island:											
Pawtucket	0	0	0	0	0	0	0	0	0	0	19
Providence	2	2	0	0	0	1	1	3	1	2	52
Connecticut:											
Bridgeport	2	1	0	0	0	2	0	0	0	0	20
Hartford	1	1	0	0	0	1	1	1	0	12	27
New Haven	1	0	0	0	0	4	3	1	0	1	48
MIDDLE ATLANTIC											
New York:											
Buffalo	4	5	0	0	0	15	2	2	1	14	112
New York	24	25	0	0	0	(2) 90	40	25	4	102	1,067
Rochester	3	7	0	0	0	1	1	0	1	0	64
Syracuse	3	1	0	0	0	2	1	0	0	0	43
New Jersey.											
Camden	1	0	0	0	0	0	0	0	0	2	20
Newark	4	3	0	0	0	7	2	1	0	59	72
Trenton	0	0	0	0	0	8	1	0	0	1	28
Pennsylvania:											
Philadelphia	17	15	0	0	0	28	12	6	0	33	356
Pittsburgh	8	5	0	0	0	6	2	6	1	7	142
Reading	0	2	0	0	0	0	2	0	0	4	26

[1] No estimate made.
[2] Pulmonary tuberculosis only.

City reports for week ended August 20, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	3	7	0	0	0	15	3	5	2	9	107
Cleveland	10	11	0	0	0	14	5	8	0	14	147
Columbus	2	10	0	0	0	5	1	0	0	18	67
Toledo	4	2	1	0	0	5	3	2	0	23	37
Indiana:											
Fort Wayne	0	4	0	0	0	2	1	0	0	4	30
Indianapolis	2	7	1	5	0	9	2	1	0	14	87
South Bend	1	0	0	0	0	0	1	0	0	2	8
Terre Haute	0	2	0	0	0	2	0	0	0	0	15
Illinois:											
Chicago	23	37	1	1	0	49	7	6	0	156	550
Springfield	0	2	0	1	0	0	1	2	0	0	18
Michigan:											
Detroit	22	16	2	4	0	22	6	4	0	98	230
Flint	3	10	0	0	0	2	0	1	0	1	26
Grand Rapids	2	3	0	0	0	1	0	0	0	3	25
Wisconsin:											
Kenosha	0	2	1	0	0	0	0	0	0	4	8
Madison	0	1	0	0	0	0	0	0	0	4	4
Milwaukee	6	4	1	0	0	6	1	1	0	37	87
Racine	1	0	0	0	0	1	0	0	0	14	8
Superior	1	2	0	0	0	0	0	0	0	0	9
WEST NORTH CENTRAL											
Minnesota:											
Duluth	4	3	1	0	0	0	1	2	1	6	16
Minneapolis	11	10	1	0	0	0	1	1	0	0	66
St. Paul	5	1	1	0	0	4	1	0	0	4	72
Iowa:											
Davenport	0	0	0	0			0	0		0	
Des Moines	2	3	0	11		1	0	5		0	
Sioux City	1	0	1	0			0	0		3	
Waterloo	1	0	0	0			0	0		0	
Missouri:											
Kansas City	2	4	0	0	0	6	3	3	0	6	70
St. Joseph	1	1	0	3	0	0	1	1	0	1	
St. Louis	6	6	0	1	0	12	8	9	1	24	150
North Dakota:											
Fargo	1	1	0	0	0	0	0	0	0	0	1
Grand Forks	1	2	0	0			0	0		0	
South Dakota:											
Aberdeen	0	0	0	0			0	0		0	
Sioux Falls	1	0	0	0			0	0		0	
Nebraska:											
Lincoln	1	0	0	0	0	0	0	0	0	0	11
Omaha	1	0	1	0	0	1	1	0	0	0	40
Kansas:											
Topeka	1	1	0	0	0	1	1	0	0	15	8
Wichita	1	5	1	1	0	1	2	3	0	8	34
SOUTH ATLANTIC											
Delaware:											
Wilmington	0	0	0	0	0	0	0	0	0	0	14
Maryland:											
Baltimore	6	5	0	0	0	18	10	12	1	39	190
Cumberland	0	2	0	0	0	0	1	1	0	0	11
Frederick	0	0	0	0	0	0	0	0	0	0	
District of Columbia:											
Washington	3	5	0	1	0	9	5	4	1	1	105
Virginia:											
Lynchburg	0	0	0	0	0	1	1	1	0	1	10
Norfolk	0	4	0	0	0	1	2	0	0	2	3
Richmond	2	1	0	0	0	2	2	2	0	0	39
Roanoke	0	1	0	0	0	1	1	2	0	0	17
West Virginia:											
Charleston	0	1	0	0	0	0	2	0	0	0	20
Wheeling	1	0	0	0	0	0	1	2	0	1	12
North Carolina:											
Raleigh	1	0	0	0	0	2	0	0	0	7	10
Wilmington	0	0	0	0	0	0	1	0	0	0	10
Winston-Salem	0	0	1	0	0	0	3	2	0	9	15

City reports for week ended August 20, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
SOUTH ATLANTIC—continued											
South Carolina:											
Charleston	0	0	1	0	0	3	2	5	0	0	27
Columbia	0	0	0	0			1	1		0	10
Greenville	0	0	0	0	0	2	0	0	0	0	7
Georgia:											
Atlanta	3	4	1	1	0	1	4	10	0	4	62
Brunswick	0	0	0	0	0	0	0	1	0	0	3
Savannah	0	0	1	0	0	4	1	1	0	0	35
Florida:											
Miami		0		0	0	0		0	0	0	17
St. Petersburg	0		0		0	0	0		0		10
Tampa	0	0	0	0	0	2	0	1	0	1	23
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0	0	1	0	0	1	1	2	0	0	29
Lexington		0		0	0	2		0	0	0	16
Louisville	1	0	0	0	0	3	5	4	0	4	65
Tennessee:											
Memphis	0	0	0	5	0	6	7	2	2	0	74
Nashville	1	0	0	0	0	2	7	12	3	2	37
Alabama:											
Birmingham	3	2	1	0	0	7	5	21	3	4	69
Mobile	0	0	1	0	0	4	1	0	0	0	21
Montgomery	1	2	0	0	0	0	1	2	0	0	
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	0	0	0	0			0	3		0	
Little Rock	0	1	0	0	0	2	2	1	0	0	
Louisiana:											
New Orleans	1	3	0	0	0	11	5	8	1	5	151
Shreveport	0	1	0	0	0	2	2	2	1	0	30
Oklahoma:											
Oklahoma City	1	2	0	0	0	0	2	4	0	0	26
Tulsa		0		0				2		0	
Texas:											
Dallas	2	0	0	1	0	1	4	1	0	1	49
Galveston	0	0	0	0	0	0	0	1	0	0	13
Houston	0	1	0	0	0	5	0	2	0	0	65
San Antonio	0	0	0	0	0	8	2	1	0	0	64
MOUNTAIN											
Montana:											
Billings	0	1	0	0	0	0	0	0	0	2	3
Great Falls	0	0	0	0	0	0	1	0	0	0	5
Helena	0	1	0	0	0	0	0	0	0	0	4
Missoula	0	2	0	0	0	0	1	0	0	0	4
Idaho:											
Boise	0	1	0	0	0	0	0	0	0	0	4
Colorado:											
Denver	3	0	1	0	0	14	3	0	0	9	62
Pueblo	0	0	0	0	0	4	1	1	0	2	13
New Mexico:											
Albuquerque	1	0	0	0	0	3	1	4	0	0	6
Utah:											
Salt Lake City	1	3	0	2	0	3	1	1	0	17	26
Nevada:											
Reno	0	1	0	0	0	0	1	1	0	0	3
PACIFIC											
Washington:											
Seattle	3	2	1	0			2	3		19	
Spokane	3	0	1	0			1	0		0	
Tacoma	1	2	1	1	0	3	1	1	0	2	25
Oregon:											
Portland	3	1	5	1	0	2	1	1	0	16	66
California:											
Los Angeles	6	6	3	0	0	22	4	4	1	23	200
Sacramento	1	1	0	3	0	1	2	0	0	8	15
San Francisco	5	5	0	1	0	4	2	4	0	6	95

City reports for week ended August 20, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Boston	1	2	1	0	1	0	1	21	5
Springfield	0	0	0	0	0	0	0	1	1
Worcester	0	0	0	0	0	0	0	1	0
Rhode Island:									
Providence	0	1	0	0	0	0	1	0	0
Connecticut:									
Hartford	0	1	0	0	0	0	0	1	0
New Haven	0	0	0	0	0	0	0	1	0
MIDDLE ATLANTIC									
New York:									
Buffalo	0	0	0	0	0	0	0	3	0
New York	2	2	4	3	0	1	7	48	6
Rochester	0	0	0	0	0	0	0	1	0
New Jersey:									
Newark	0	0	0	0	0	0	1	4	0
Pennsylvania:									
Philadelphia	0	0	0	0	2	1	0	2	0
Pittsburgh	1	0	0	0	0	0	0	5	0
Reading	0	0	0	0	0	0	0	1	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	0	0	0	0	0	0	0	4	1
Cleveland	1	0	0	0	0	0	0	3	0
Illinois:									
Chicago [1]	4	2	1	1	0	0	3	6	1
Springfield	0	0	0	0	0	0	0	1	1
Michigan:									
Detroit	0	0	0	0	0	0	1	1	0
Flint	0	0	0	0	0	0	1	2	0
Grand Rapids	0	0	0	0	0	0	1	2	0
Wisconsin:									
Milwaukee	1	0	0	0	0	0	1	5	0
Superior	0	1	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	3	0	0	0	0	0	1	0	0
Iowa:									
Des Moines	1	1	0	0	0	0	0	0	0
Missouri:									
Kansas City	1	0	0	1	0	0	0	5	1
St. Louis	1	0	0	0	0	0	0	0	0
Nebraska:									
Omaha	0	0	0	0	0	0	0	1	0
Kansas:									
Wichita	0	0	0	0	0	0	0	3	0
SOUTH ATLANTIC									
Maryland:									
Baltimore	0	1	0	1	0	0	2	1	0
Virginia:									
Richmond	0	0	0	0	0	1	0	0	0
West Virginia:									
Wheeling	0	0	0	0	0	0	0	5	0
North Carolina:									
Winston-Salem	0	0	0	0	0	2	0	0	0
South Carolina:									
Charleston	0	0	0	0	1	2	0	0	0
Georgia:									
Atlanta	0	0	0	0	1	0	0	0	0
Savannah [2]	0	0	0	0	1	0	0	0	0
Florida: [2]									
Miami	0	0	0	0	1	0	0	0	0

[1] Rabies (human); 1 case and 1 death at Chicago, Ill., and 1 death at Nashville, Tenn.
[2] Typhus fever: 1 case at Savannah, Ga., and 2 cases at Tampa, Fla.

City reports for week ended August 20, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
EAST SOUTH CENTRAL									
Kentucky:									
Lexington	0	0	0	0	0	0	-------	0	2
Louisville	0	0	0	0	0	0	0	3	0
Tennessee:									
Memphis	0	0	0	0	0	1	1	0	0
Nashville [1]	0	0	0	0	0	0	0	1	0
Alabama:									
Birmingham	0	0	0	0	1	2	0	0	0
Montgomery	0	0	0	0	0	0	0	1	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	4	0	0	0
Louisiana:									
New Orleans	0	0	1	0	3	2	0	2	0
Shreveport	0	0	0	0	0	1	0	0	0
Oklahoma:									
Oklahoma City	0	0	0	0	0	1	0	1	0
Texas:									
Dallas	0	0	0	0	0	1	0	1	0
Houston	1	0	0	0	0	1	0	0	0
MOUNTAIN									
Colorado:									
Denver	1	0	0	0	0	0	0	0	0
New Mexico:									
Albuquerque	0	0	0	0	0	0	0	1	1
Utah:									
Salt Lake City	0	0	0	0	0	0	0	1	0
PACIFIC									
Washington:									
Seattle	0	-------	0	-------	0	-------	1	1	-------
Oregon:									
Portland	4	1	0	0	0	0	0	0	0
California:									
Los Angeles	1	0	0	0	0	1	0	1	2
Sacramento	1	0	1	0	0	0	1	1	0
San Francisco	1	0	0	0	1	0	0	5	0

For footnote, see p. 2275.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended August 20, 1927, compared with those for a like period ended August 21, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, July 17 to August 20, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug. 20, 1927
101 cities	90	[2] 92	80	[3] 94	78	78	69	90	68	[4] 80
New England	33	63	40	91	40	63	31	70	47	111
Middle Atlantic	109	106	103	104	88	92	62	97	59	94
East North Central	98	108	83	102	104	80	101	94	87	[5] 84
West North Central	95	54	85	56	52	42	56	67	83	[6] 43
South Atlantic	34	[2] 87	20	89	43	65	48	82	60	62
East South Central	10	25	21	31	10	31	57	25	21	51
West South Central	39	126	39	71	39	92	26	92	64	75
Mountain	64	99	91	117	118	135	73	180	146	54
Pacific	174	65	118	[3] 121	102	76	104	107	62	60

MEASLES CASE RATES

101 cities	164	[2] 108	108	[3] 58	70	48	59	28	44	[4] 34
New England	108	197	83	169	83	93	68	63	52	84
Middle Atlantic	108	92	63	45	42	43	33	28	27	35
East North Central	279	90	101	47	113	29	84	19	72	[5] 15
West North Central	184	48	93	40	58	34	67	22	28	[6] 23
South Atlantic	127	[2] 141	114	69	47	38	80	14	35	27
East South Central	124	25	93	46	41	10	31	15	36	5
West South Central	13	55	9	59	9	55	4	21	9	42
Mountain	173	99	128	63	137	45	64	36	18	18
Pacific	212	280	121	[3] 65	121	144	94	60	78	71

SCARLET FEVER CASE RATES

101 cities	82	[2] 64	73	[3] 63	61	51	51	58	48	[4] 49
New England	85	100	118	107	104	51	68	93	73	51
Middle Atlantic	75	50	52	39	38	36	30	39	29	31
East North Central	89	75	84	87	79	75	55	73	46	[5] 81
West North Central	127	79	143	79	101	62	119	75	119	[6] 56
South Atlantic	35	[2] 41	34	40	30	27	30	33	39	42
East South Central	93	31	62	41	31	51	47	36	36	20
West South Central	82	46	39	25	13	25	21	59	17	60
Mountain	64	99	36	153	64	126	36	117	36	81
Pacific	91	92	86	[3] 65	83	60	86	63	78	42

SMALLPOX CASE RATES

101 cities	6	[2] 10	5	[3] 5	8	6	7	4	2	[4] 5
New England	0	0	0	0	0	0	0	0	0	0
Middle Atlantic	0	0	0	0	1	0	0	0	1	0
East North Central	8	13	6	9	9	9	1	5	2	[5] 6
West North Central	14	12	4	6	14	0	4	4	4	[6] 8
South Atlantic	6	[2] 12	2	4	11	9	11	5	6	4
East South Central	10	36	21	10	16	5	26	0	5	25
West South Central	13	8	4	13	13	17	21	0	0	4
Mountain	27	117	9	27	9	18	73	9	0	18
Pacific	8	21	32	[3] 10	24	21	32	24	5	13

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.
[2] Norfolk, Va., not included.
[3] Seattle, Wash., and Spokane, Wash, not included.
[4] Detroit, Mich., and Wichita, Kans., not included.
[5] Detroit, Mich., not included.
[6] Wichita, Kans., not included.

Summary of weekly reports from cities, July 17 to August 20, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug. 20, 1927
101 cities	18	[2] 20	30	[3] 21	28	25	35	25	41	[4] 38
New England	9	16	14	9	12	7	17	30	17	30
Middle Atlantic	9	8	23	13	19	13	24	15	34	20
East North Central	6	9	10	11	12	9	20	14	17	[5] 19
West North Central	12	14	22	16	18	26	24	22	48	[6] 33
South Atlantic	47	[2] 50	54	36	65	58	99	45	93	82
East South Central	134	122	243	117	181	183	140	97	186	219
West South Central	30	55	47	55	43	50	47	88	43	80
Mountain	46	27	36	72	27	45	73	36	73	27
Pacific	8	16	11	[3] 24	29	13	29	10	24	31

INFLUENZA DEATH RATES

	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug. 20, 1927
95 cities	3	[2] 3	2	3	2	2	1	3	3	[4] 4
New England	2	0	0	2	0	0	0	2	0	2
Middle Atlantic	2	4	1	4	2	1	1	2	1	2
East North Central	4	2	1	1	1	0	0	2	3	[5] 2
West North Central	2	2	0	0	0	2	2	6	2	[6] 0
South Atlantic	4	[2] 2	2	2	4	6	0	4	2	6
East South Central	5	15	5	10	0	5	10	5	0	10
West South Central	9	0	22	9	4	4	13	13	26	30
Mountain	9	9	0	0	9	9	0	0	0	0
Pacific	4	3	4	3	11	3	0	3	7	0

PNEUMONIA DEATH RATES

	July 24, 1926	July 23, 1927	July 31, 1926	July 30, 1927	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug. 20, 1927
95 cities	54	[2] 56	48	49	54	47	50	55	54	[4] 46
New England	33	56	33	49	54	33	31	77	40	49
Middle Atlantic	64	59	41	56	56	46	62	57	58	47
East North Central	47	55	47	42	42	44	35	41	35	[5] 36
West North Central	40	21	57	17	51	44	25	44	49	[6] 24
South Atlantic	57	[2] 75	51	44	68	53	57	72	87	53
East South Central	98	46	62	46	52	51	52	66	36	66
West South Central	53	65	71	86	97	69	106	56	66	69
Mountain	64	45	55	36	64	54	82	63	82	36
Pacific	35	72	71	79	57	62	39	55	78	72

[2] Norfolk, Va., not included.
[3] Seattle, Wash., and Spokane, Wash., not included.
[4] Detroit, Mich., and Wichita, Kans., not included.
[5] Detroit, Mich., not included.
[6] Wichita, Kans., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,809	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

THE FAR EAST

Report for week ended August 13, 1927.—The following report for the week ended August 13, 1927, was transmitted by the Eastern Bureau of the Health Section of the Secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Maritime towns	Plague		Cholera		Smallpox		Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths		Cases	Deaths	Cases	Deaths	Cases	Deaths
Iraq: Basra	0	0	125	108	1	1	Dutch East Indies:						
Persia:							Surabaya	0	0	0	0	1	----
Mohammerah	0	0	16	12	0	0	Banjermasin	0	0	0	0	25	----
Abadan	0	0	27	22	0	0	Menado	0	0	0	0	1	----
Ahwaz	0	0	8	7	0	0	Siam: Bangkok	0	0	1	0	0	0
Minah	0	0	----	[1] 23	0	0	French Indo-China:						
British India:							Haiphong	0	0	1	1	0	0
Bombay	----	3	----	11	5	3	Turane	0	0	2	2	0	0
Negapatam	----	0	----	1	0	0	China:						
Madras	----	0	----	72	4	0	Amoy	0	0	5	----	0	0
Calcutta	----	0	----	13	6	5	Shanghai	0	0	----	2	0	0
Bassein	----	5	----	0	0	0	Canton	0	0	7	4	0	0
Rangoon	----	3	----	1	6	2	Macao	0	0	----	2	0	0
Straits Settlements:							Hong Kong	0	0	0	0	1	1
Singapore	0	0	0	0	1	1	Japan: Nagasaki	0	0	0	0	1	1

[1] Deaths from cholera reported on Aug. 12.

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Arabia.—Jeddah, Aden, Perim, Bahrein.

Persia.—Bender-Abbas, Bushire, Lingah.

India.—Karachi, Chittagong, Cochin, Tuticorin, Vizagapatam, Moulmein.

Ceylon.—Colombo.

Portuguese India—Nova Goa.

Federated Malay States—Port Swettenham.

Straits Settlements.—Penang.

Dutch East Indies.—Batavia, Pontianak, Semarang Cheribon, Makassar, Balikpapan, Padang, Belawan-Deli, Tarakan, Sabang, Palembang, Samarinda.

Sarawak.—Kuching.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

Portuguese Timor.—Dilly.

Philippine Islands.—Manila, Iloilo, Jolo, Cebu, Zamboanga.

French Indo-China.—Saigon and Cholon.

China.—Tientsin, Tsingtao.

Formosa.—Keelung, Takao.

Chosen—Chemulpo, Fusan.

Manchuria.—Yingkow, Antung, Harbin, Mukden, Changchun.

Kwantung—Port-Arthur, Dalren.

Japan.—Yokohama, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns, Port Moresby.

New Guinea—Port Moresby

New Britain Mandated Territory.—Rabaul and Kokopo.

New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.

Western Samoa.—Apia.
New Caledonia.—Noumea.
Fiji.—Suva.
Hawaii.—Honolulu.
Society Islands.—Papeete.

AFRICA

Egypt.—Alexandria, Suez, Port Said, El Tor.
Anglo-Egyptian Sudan.—Port Sudan, Suakin.
Eritrea.—Massaua.
French Somaliland.—Djibouti.
British Somaliland.—Berbera.
Italian Somaliland.—Mogadiscio.
Kenya.—Mombasa.
Zanzibar.—Zanzibar.
Tanganyika.—Dar-es-Salaam.
Seychelles.—Victoria.
Portuguese East Africa.—Mozambique, Beira, Lourenco-Marques.
Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.
Reunion.—Saint Denis.
Mauritius.—Port Louis.
Madagascar.—Majunga, Tamatave, Diego-Suarez.

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from:

Arabia.—Kamaran.
Union of Socialist Soviet Republics.—Vladivostok.

Belated information:

Week ended July 30: *Karikal* and *Pondicherry*, nil.
Week ended August 6. *Pondicherry*, cholera, 3 cases, 3 deaths.

Movement of infected ships:

Saffagha (Egypt).—The oil-tanker *War-Mehtar* arrived from Abadan on August 4 nfected with cholera.

CANADA

Communicable diseases—Week ended August 20, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases in seven Provinces of Canada for the week ended August 20, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Influenza	4			1	2			7
Poliomyelitis			1		1			2
Smallpox				27	5	6	7	45
Typhoid fever	4	13	27	14	2	1	2	63

Communicable diseases—Quebec—Week ended August 20, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended August 20, 1927, as follows:

Disease	Cases	Disease	Cases
Chicken pox	1	Scarlet fever	28
Diphtheria	32	Smallpox	1
German measles	2	Tuberculosis	17
Influenza	1	Typhoid fever	27
Measles	5	Whooping cough	5
Poliomyelitis	1		

Typhoid fever—Chatham, Ontario.—An outbreak of typhoid fever has been reported at Chatham, Ontario, Canada, about 50 miles from Detroit. On August 26, 81 cases were said to have been

officially reported. The source of infection is believed to have been a typhoid carrier employed in a dairy. The Pasteurizing process in this dairy was found to be defective.

Milk was formerly shipped from Chatham to Detroit for butter making, but the Detroit city health department has prohibited the importation of milk or cream from the infected locality until all dairies from which the products are shipped have been inspected and new permits issued.

Precautions against the spread of the disease are being taken.

Typhoid fever—Montreal—January 2–August 27, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	May 7, 1927	106	19
Jan. 15, 1927	4	3	May 14, 1927	367	16
Jan. 22, 1927	1	2	May 21, 1927	770	28
Jan. 29, 1927	3	1	May 28, 1927	353	38
Feb. 5, 1927	1	0	June 4, 1927	239	37
Feb. 12, 1927	0	0	June 11, 1927	128	36
Feb. 19, 1927	1	2	June 18, 1927	86	
Feb. 26, 1927	1	1	June 25, 1927	75	23
Mar. 5, 1927	9	1	July 2, 1927	66	21
Mar. 12, 1927	203	4	July 9, 1927	52	10
Mar. 19, 1927	383	14	July 16, 1927	39	4
Mar. 26, 1927	568	22	July 23, 1927	22	9
Apr. 2, 1927	649	48	July 30, 1927	23	10
Apr. 9, 1927	386	40	Aug. 6, 1927	16	5
Apr. 16, 1927	175	38	Aug. 13, 1927	20	5
Apr. 23, 1927	125	43	Aug. 20, 1927	14	4
Apr. 30, 1927	105	23	Aug. 27, 1927	8	3

CZECHOSLOVAKIA

Communicable diseases—June, 1927.—During the month of June, 1927, communicable diseases were reported in the Republic of Czechoslovakia as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	4		Puerperal fever	35	8
Cerebrospinal meningitis	16	9	Scarlet fever	1,200	13
Diphtheria	428	27	Trachoma	219	
Dysentery	25	2	Typhoid fever	490	29
Malaria	168		Typhus fever	28	
Paratyphoid fever	26	2			

EGYPT

Communicable diseases—Two weeks ended July 29, 1927.—During the two weeks ended July 29, 1927, communicable diseases were reported in Egypt as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Influenza	63		Typhoid fever	103	
Smallpox	2		Typhus fever	4	

UNION OF SOUTH AFRICA

Plague rodent—Smallpox—Typhus fever—Week ended July 16, 1927.—Following the discovery of plague-infected Peba gerbilles on the farm Mimosa, another carcass, also of a Peba gerbille, found on June 30 close to the village of Nieuwe Rust, about 40 miles northwest of Van Rhynsdorp, showed the presence of *Bacillus pestis.*

In the Roodepoort area, during the course of active operations to clear of rodents the locality in which the plague-infected carcass was found on June 23, several carcasses of veld rodents were found, but all were decomposed, dried up, and useless for bacteriological examination.

A fresh outbreak of smallpox was reported in Libode district, Cape Province, during the week. Smallpox was also reported present in the districts of Idutywa, Cape Province, and Pilgrims Rest, Transvaal.

Two sporadic cases of typhus fever were reported as having occurred in Port Elizabeth. It was reported present in four districts in Cape Province and two districts in Natal, as well as in Johannesburg, Transvaal. Fresh outbreaks were reported as having occurred in Middleburg and Tsolo districts, Cape Province.

YUGOSLAVIA

Communicable diseases—July, 1927.—During the month of July, 1927, communicable diseases were reported in Yugoslavia as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	135	19	Rabies	1	1
Cerebrospinal meningitis	7	4	Scarlet fever	507	81
Diphtheria	72	13	Tetanus	34	14
Dysentery	265	24	Typhoid fever	304	28
Leprosy		1	Typhus fever	11	4
Measles	463	10	Whooping cough	243	1

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended September 9, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	July 17-23			Present.
Swatow	do	20		
India	July 3-9			Cases, 9,996; deaths, 5,556.
Bombay	July 10-16	7	2	
Calcutta	June 19-July 16	120	77	
Madras	July 24-30	208	105	
Rangoon	July 3-16	1	1	
India, French Settlements in	May 29-June 18	5	5	

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended September 9, 1927—Continued

CHOLERA—Continued

Place	Date	Cases	Deaths	Remarks
Indo-China (French)	June 21-July 10			Cases, 2,147.
Annam	do	320		
Cambodge	do	38		
Cochin-China	do	305		
Saigon	July 8-14	3		
Tonkin	do	1,484		
Philippine Islands:				
Manila	July 17-23	1		
Province -				
Bulacan	June 26-July 2	1	1	
Siam	July 10-16	27	20	
Bangkok	do	1		

PLAGUE

Place	Date	Cases	Deaths	Remarks
British East Africa:				
Kenya	June 19-July 2	42		
Uganda	June 12-18	100	93	
China:				
Amoy	July 17-23			Present.
Ecuador:				
Guayaquil	July 1-31	5		Rats taken, 23,221; found plague-infected, 6.
Egypt:				
Minia	Aug. 8-9	4		
Greece	June 1-30	3	2	
India	July 3-9			Cases, 116; deaths, 87.
Bombay	July 10-16	1	2	
Madras	July 3-9	39	16	
Rangoon	July 3-23	11	11	
Indo-China (French)	June 21-July 10	11		
Kwang-Chow-Wan	do	5		
Java:				
Batavia	July 10-16	20	20	Province.
Nigeria	Mar. 1-May 31	228	177	
Syria:				
Beirut	June 11-July 10	3		
Tunisia	June 1-July 10	13		
On vessel	July 10-16	3		On Norwegian vessel at Gavle, 125 miles north of Stockholm.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	June 11-July 10	315		
British East Africa:				
Tanganyika	June 12-18	2		
Zanzibar	May 1-31	12	5	
British South Africa:				
Northern Rhodesia	July 17-23	2		
Canada	Aug. 14-20			Cases, 45.
Alberta	do	7		
Calgary	do	1		
Manitoba	do	5		
Winnipeg	Aug. 21-27	2		
Ontario	do	27		
Ottawa	Aug. 27-Nov. 2	9		
Quebec	Aug. 14-20	1		
Saskatchewan	do	6		
Moose Jaw	do	5		
China:				
Foochow	June 26-July 16			Present.
Manchuria—				
Changchun	July 24-30	1		
Fushun	do	1		
Mukden	do	1		
Chosen	May 1-31	97	27	
Egypt	July 23-29	2		
Cairo	Apr. 8-15	1	1	
France	June 1-30	50		
Gold Coast	May 1-31	11	3	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended September 9, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Great Britain:				
England and Wales	Aug. 7-13			Cases, 127.
Newcastle-on-Tyne	do	1		
Sheffield	July 31-Aug. 6	2		
Greece	June 1-30	14		
India	July 3-9			Cases, 2,870; deaths, 838.
Bombay	July 10-16	18	11	
Calcutta	June 19-July 16	73	55	
Karachi	July 10-16	1		
Madras	July 24-30	3	1	
Rangoon	July 3-23	24	5	
India, French Settlements in	May 22-June 18	29	23	
Indo-China (French)	June 11-July 20	78		
Java:				
Batavia	July 10-16	1		
Mexico	Mar. 1-31		162	
Monterey	July 1-31	6	4	
Morocco	June 1-30	59		
Nigeria	May 1-31	517	162	
Poland	June 26-July 2	2		
Siam	July 10-16			Cases, 10; deaths, 3.
Venezuela:				
Maracaibo	July 12-18		1	

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	June 11-July 20	136	10	
Bulgaria	May 11-June 20	55	4	
Chile:				
Valparaiso	July 31-Aug. 6		1	
Chosen	May 1-31	182	12	
Czechoslovakia	June 1-30	28		
Egypt	July 16-29	8		
Alexandria	July 30-Aug. 5	2	3	
Cairo	Apr. 8-22	8	3	
Greece	June 1-30	2		
Lithuania	May 1-June 30	182	20	
Mexico	Mar. 1-31		62	
Morocco	June 11-July 10	287		
Palestine:				
Haifa	July 24-Aug. 8	4		
Jaffa	Aug. 2-8	1		
Jerusalem	June 28-July 4	1		
Nazareth	July 19-25	1		
Safad	June 21-Aug. 8	5		
Poland	June 26-July 2	22	2	
Rumania	May 29-June 25	236	14	
Tunisia	June 11-July 20	21		
Yugoslavia	July 1-31	11	4	

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Gold Coast	May 1-31	37	15	

Reports Received from June 25 to September 2, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-28	1	1	
Canton	May 1-July 16	12	5	
Kulangsu	June 21	1		
Shanghai	June 19-25	2		
Do	Reported Aug. 19			Present.
Swatow	May 15-July 16	66	12	

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 2, 1927—Continued

CHOLERA—Continued

Place	Date	Cases	Deaths	Remarks
India	Apr. 17-July 2			Cases, 79,573; deaths, 47,075.
Bombay	May 8-July 2	7	3	
Calcutta	May 8-June 18	396	247	
Karachi	May 29-June 4	1	1	
Madras	June 19-25	5	3	
Rangoon	May 8-June 25	15	11	
India, French Settlements in	Mar 30-June 30	10	3	
Indo-China (French)	Apr. 1-June 20			Cases, 8,998.
Annam	do	1,147		
Cambodge	do	197		
Cochin-China	do	1,049		
Saigon	June 4-July 7	6	4	
Tonkin	Apr 1-June 30	6,605		
Iraq.				
Basra	Reported July 25	9	7	
Persia.				
Abadan	July 19-31		166	
Mohammerah	do		61	
Nasseri	do		10	
Philippine Islands.				
Bulacan Province	June 7-July 8	2	1	
Leyte Province—				
Barugo	June 29	1	1	
Carigara	June 23	1	1	Final diagnosis not received.
Palo	May 18	1		
Siam	May 1-July 9			Cases, 181; deaths, 98.
Bangkok	do	38	12	
On vessel				
Steamship Adrastus	Reported Aug. 6	1	1	At Yokohama, Japan.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Argentina	Jan. 1-June 30			Cases, 71; deaths, 44.
Buenos Aires	Apr. 10-May 7	4	3	
Cordoba	Jan. 11-Mar. 23	50	29	
Corrientes	June 1	1	1	
Entre Rios	Mar. 29-Aug. 1	3	1	
Santa Fe	Apr. 28-May 16	4	3	
Territory—				
Chaco—				
Barranqueras	May 29	2	2	
Formosa	June 25	3	2	
Pampa	Reported July 6	2		
City—				
Merou	Reported July 14			Present.
Rosario	May 7	1	1	
Santa Fe	May 16	4	2	
Azores.				
Ribeira Grande	June 12-18			9 miles from port.
St. Michaels Island	May 15-July 30	3		
British East Africa:				
Kenya	Apr. 24-June 11	18	14	
Nairobi	May 22-28	6		
Tanganyika	Mar. 29-May 28		37	
Uganda	Jan. 1-Feb. 28	138	121	
Do	Mar. 27-June 11	266	207	
Canary Islands:				
Laguna district—				
Tejina	June 17	1		
Ceylon:				
Colombo	May 1-July 2	17	11	Plague rats, 4.
China:				
Amoy	July 3-16			Present in surrounding country.
Ecuador:				
Guayaquil	June 1-30			Rats taken, 25,069; found infected, 28.
Egypt	May 21-July 8			Cases, 7; deaths, 2.
Alexandria	June 4-10	1		
Biba	do	1		At Nana.
Beni-Souef	June 4-July 13	5	2	
Dakhalia	June 24-July 9	6	1	
Port Said	June 24-July 21	4	1	
Tanta district	June 4-10	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 2, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Greece	May 1-31	1	1	
Athens	June 1-Aug. 6	2		Including Piraeus.
Mytilene	Aug. 9	1		
Patras	May 30-Aug. 6	6	1	
Hawaii Territory:				
Hamakua	July 15			1 plague rodent.
Honokaa	May 17-23	2	2	
Paauilo	July 26-Aug. 1		4	
India	Apr. 17-July 2			Cases, 21,584; deaths, 8,166.
Bombay	May 8-June 25	71	63	
Madras	May 1-July 16	166	79	
Rangoon	May 8-July 2	27	24	
Indo-China (French)	Apr. 1-June 20	21		
Kwang-Chow-Wan	May 21-June 10	57		
Iraq:				
Baghdad	Apr. 8-May 28	12	1	
Java				
Batavia	May 1-July 9	158	159	Province.
East Java and Madura	May 22-June 18	23	23	
Pasoeroean Residency	May 9			Outbreak reported at Nagdiwono.
Surabaya	Apr. 17-May 7	24	24	
Madagascar				Mar. 16-Apr. 30, 1927: Cases, 256; deaths, 135
Province—				
Ambositra	Mar. 16-June 15	73	67	
Antisrabe	Mar. 16-May 15	8	8	
Miarinarivo (Itasy)	Mar. 16-May 31	45	45	
Moramanga	May 16-June 15	20	19	
Tananarive	Mar 16-May 31	196	170	
Tananarive Town	do	22	20	
Peru	Apr.-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	do	13	4	
Lima City	Apr 1-30	5	1	
Senegal	May 23-July 17			Cases, 442; deaths, 259.
Baol	June 2-July 31	45	23	
Cayor Frontier	July 4-31	126	74	
Dakar	June 20-July 30	80	50	
Facel	July 6	17	8	
Guindel	June 20-26	11	2	
M'Bour	July 6-10	28	23	
Medina	June 13-19	2	2	
Pout	July 4-10	1		
Rufisque	May 23-July 30	163	117	
Thies District	do	27	9	
Tivaouane	June 2-July 17	50	32	
Siam	Apr. 1-June 25			Cases, 10; deaths, 7.
Bangkok	May 8-June 11	2	1	
Tunisia	Apr. 21-May 31	131		
Tunis	July 25-Aug. 1	1		
Turkey:				
Constantinople	May 13-19	1		
Union of South Africa.				
Cape Province—				
Maraisburg District	May 1-14	2	2	Native.
On vessel:				
Steamship Avoroff	June 24-30	1		On Greek war ship at port of Athens.
Steamship Ransholm	Aug. 5	3		At Gefle, Sweden, from Rufisque, Senegal.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-June 10			Cases, 333.
Algiers	May 11-June 30	8		
Oran	May 21-July 31	38		
Arabia:				
Aden	July 17-Aug. 1	2	1	
Brazil:				
Rio de Janeiro	May 22-July 29	7	8	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 2, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
British East Africa:				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 29-May 7		22	
Zanzibar	Apr. 1-30	7	2	
British South Africa:				
Northern Rhodesia	Apr. 30-July 15	104	2	
Canada	June 5-Aug. 13			Cases, 323.
Alberta	June 12-Aug. 13			Cases, 85.
Calgary	June 12-Aug. 6	8		
British Columbia—				
Vancouver	May 23-29	2		
Manitoba	June 5-Aug 13			Cases, 20.
Winnipeg	June 12-Aug. 20	15		
Ontario	June 5-Aug. 13			Cases, 135.
Ottawa	June 12-Aug 20	91		
Sarnia	Aug. 7-13	1		
Toronto	June 19-July 23	9		
Quebec	do	13		
Saskatchewan	June 12-Aug. 13			Cases, 46.
Regina	July 17-Aug. 6	3		
Ceylon	May 1-7			Cases, 3; deaths, 1.
China:				
Amoy	May 8-28	1		
Do	July 3-16			Present in surrounding country.
Antung	July 4-31	3		
Chefoo	May 8-14			Present.
Foochow	May 8-June 11			Do.
Hong Kong	May 8-July 9	17	16	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-July 9	7		
Dairen	May 2-June 26	9	5	
Fushun	May 15-June 5	9		
Harbin	June 13-July 10	4		
Kai-Yuan	July 3-9	2		
Mukden	May 22-July 9	5		
Penshu	July 3-9	1		
Ssupingkai	May 8-July 9	3		
Tientsin	May 8-July 16	17		
Chosen	Feb. 1-Apr 30			Cases, 354; deaths, 84.
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr. 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr. 1-30	1		
Curacao	May 29-June 4	1		Alastrim.
Ecuador				
Guayaquil	June 1-30	2		
Egypt	May 7-July 15			Cases, 19; deaths, 3.
Alexandria	May 21-June 17	4	1	
Cairo	Jan. 22-Apr 1	11	2	
France	Apr. 1-May 31			Cases. 128.
Paris	May 21-June 30	11	2	
Gold Coast	Mar. 1-Apr. 30	22	4	
Great Britain:				
England and Wales	May 22-Aug 6			Cases, 2,361.
Bradford	May 29-June 11	2		
Cardiff	June 19-July 2	4		
Leeds	July 17-30	2		
Liverpool	do	1		
London	May 15-June 18	2		
Newcastle on Tyne	June 12-Aug 6	4		
Sheffield	June 12-July 23	23		
Scotland—				
Dundee	May 29-July 2	5		
Greece:				
Saloniki	July 12-18		1	
Guatemala:				
Guatemala City	June 1-30		9	
Guinea (French)	June 4-10	9		
India	Apr. 17-July 2			Cases, 57,347; deaths, 14,866.
Bombay	May 28-July 2	164	110	
Calcutta	May 8-June 18	270	206	
Karachi	May 15-June 25	8	5	
Madras	May 22-July 16	15	5	
Rangoon	May 8-July 2	132	41	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 2, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
India, French Settlements in	Mar. 20-May 21	145	88	
Indo-China (French)	Mar. 21-June 10			Cases, 236.
Saigon	May 14-20	1	1	
Iraq:				
Baghdad	Apr. 10-16	2		
Basra	Apr 10-July 16	2	1	
Italy	Apr. 10-May 21	13		
Jamaica	May 29-July 30	24		Reported as alastrim.
Japan	Apr. 3-May 7			Cases, 19.
Nagasaki City	June 20-July 31	24	6	
Taiwan Island	May 21-31	1		
Java:				
Batavia	May 22-28	1		
East Java and Madura	Apr. 24-30	1		
Latvia	Apr. 1-30	1		
Mexico:				
Durango	June 1-30		1	
La Oroya	Apr. 1-June 30			Present.
San Luis Potosi	May 29-Aug. 13		11	
Tampico	June 1-July 31	1	2	
Torreon	Aug. 7-13		1	
Morocco	Apr. 1-May 31	94		
Netherlands India:				
Borneo—				
Holoe Soengei	Apr 21			Epidemic in two localities.
Pasir Residency	Apr. 30-May 6			Epidemic outbreak.
Samarinda Residency	May 21-27			Do
Nigeria	Mar. 1-Apr. 30	1,560	351	
Persia:				
Teheran	Feb. 21-Apr. 20		5	
Poland	Apr. 19-June 25	12	1	
Portugal:				
Lisbon	May 29-July 23	14	1	
Senegal				
Medina	July 4-10	7		
Siam	May 1-July 9			Cases, 93; deaths, 19.
Bangkok	May 15-July 16	11	4	
Spain:				
Valencia	May 29-June 4	2		
Straits Settlements	June 12-18			Cases, 3.
Singapore	Apr. 1-May 28	4	2	
Sumatra:				
Medan	June 5-11	2		
Switzerland:				
Berne	June 26-July 2	1		
Tunisia	Apr. 1-June 10			Cases, 10.
Tunis	June 1-10	1		
Union of South Africa:				
Cape Province—				
Elliott District	May 11-June 10			Outbreaks.
Idutywa District	July 3-9			Do.
Kalanga District	May 11-June 10			Do.
Transvaal—				
Barberton District	May 1-7			Do.

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-June 10			Cases, 263; deaths, 29.
Algiers	May 11-July 31	26		
Oran	May 21-July 31	32		
Bulgaria	Mar. 1-May 10			Cases, 151; deaths, 14.
Sofia	June 4-Aug. 5	2		
Chile:				
Antofagasta	Apr. 16-May 31	1		
Concepcion	May 29-June 4		1	
La Calera	Apr 16-May 31	1		
Ligua	Mar. 16-31	2		
Puerto Montt	Apr. 16-May 31	1		
Santiago	do	5	1	
Talcahuano	July 10-16		1	
Valparaiso	Apr. 16-July 16	4		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 2, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
China:				
Manchuria—				
Mukden	May 29-June 4	1		
Tientsin	July 10-16	1		
Chosen	Feb 1-Apr. 30			Cases, 330; deaths, 30.
Chemulpo	May 1-June 30	15	1	
Gensan	do	2		
Seoul	Apr. 1-June 30	30	2	
Czechoslovakia				Apr. 1-30, 1927: Cases, 21.
Egypt	May 28-July 29			Cases, 112, deaths, 18.
Alexandria	May 21-July 29	11	3	
Cairo	Jan 15-Apr. 1	22	5	
Estonia	Apr. 1-30			Case, 1.
Greece:				
Athens	June 1-30		9	
Iraq:				
Baghdad	Apr. 24-30	1		
Irish Free State:				
Cork County	July 3-9	1		In urban district.
Latvia	Apr 1-May 31	17		
Lithuania	Feb 1-Apr 30	121	17	
Mexico	Feb 1-28			Deaths, 26.
Mexico City	May 29-Aug 6	26		Including municipalities in Federal District.
San Luis Potosi	July 31-Aug 6		1	
Morocco	Apr 1-June 10	528		
Palestine	May 24-June 6			Cases, 3
Haifa	do	2		
Mahnaim	May 17-23	1		In Safad district.
Safad	May 17-June 20	3		
Peru:				
Arequipa	Apr 1-30		1	
Poland	Apr 10-July 25	954	96	
Portugal:				
Lisbon	May 29-June 4	1		
Rumania	Apr. 3-May 14	687	47	
Tunisia	Apr. 22-June 10			Cases, 137.
Tunis	July 5-11	1		
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa	Apr. 1-30			Cases, 55, deaths, 8, native.
Cape Province	Apr. 1-July 9	42	5	In Europeans, cases, 2.
Albany District	June 5-11			Outbreaks.
East London	May 22-28	1		Do.
Glen Grey District	May 1-7			Do.
Kentani District	June 26-July 2			Do.
Qumbu District	May 1-7			Do.
Umzimkulu District	June 26-July 2			Do.
Natal	Apr. 1-July 9	7	3	
Impendhle District	June 5-11			Do.
Orange Free State	Apr. 1-May 28	5		
Transvaal	Apr. 1-30	1		
Johannesburg	July 3-16	18	5	
Yugoslavia	May 1-31			Cases, 4.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Dahomey (West Africa):				
Porto Novo	July 1	1	1	In Syrian woman.
Gold Coast	Apr. 1-30	8	5	
Liberia:				
Monrovia	May 29-July 8	4	5	
Senegal	May 27-July 31			Cases, 5; deaths, 2.
Dakar	July 9	1		
Do	Aug 8	2	2	
M'Bour	May 27-June 19	5	5	
Ouakam	June 2-Aug. 8	2	1	
Thies	July 10	1	1	In European.
Tivaouane	May 27-June 8	5	5	

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SPECIAL ARTICLES

A Review and Discussion of Shellfish Sanitation

Reports of the Health Section, League of Nations

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UNITED STATES PUBLIC HEALTH SERVICE

HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

Asst Surg Gen R C WILLIAMS, *Chief of Division*

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They contain: (1) Current information of the prevalence and geographic distribution of preventable diseases in the United States in so far as data are obtainable, and of cholera, plague, smallpox, typhus fever, yellow fever, and other communicable diseases throughout the world. (2) Articles relating to the cause, prevention, or control of disease (3) Other pertinent information regarding sanitation and the conservation of the public health.

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PUBLIC HEALTH REPORTS

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SHELLFISH SANITATION *

By L. M. Fisher, *Associate Sanitary Engineer, United States Public Health Service*

For a number of years suspicion has at various times attached to shellfish as a cause of certain diseases, particularly typhoid fever and other intestinal infections. In many instances the evidence has been strikingly conclusive when the circumstances were carefully investigated. The finger of suspicion has so often been pointed by competent independent observers, and conclusive proof has been furnished so frequently, as to warrant the statement that contaminated shellfish must have been responsible in the aggregate for a large number of cases of typhoid fever and other intestinal disorders.

Among the first to incriminate shellfish as a source of infection was the French physician Pasquier. In 1816, long before Pasteur's great work suggested the importance of bacteria in the causation of certain diseases, and before it was known that typhoid fever was a germ disease and that the germ frequently was carried in contaminated water, Pasquier wrote a book on The Oyster From the Medical Point of View. In this book he cited an instance in which a workman laid down some 60,000 oysters in a fattening bed excavated in the moat of an old citadel receiving sewage from a garrison.[1] The first of these oysters were consumed on September 10, and on the 20th and 21st, after a sufficient incubation period had elapsed, cases of typhoid fever made their appearance among the consumers.

Since then numerous other instances have been observed and recorded in which the causal relation was established between contaminated shellfish, usually oysters, and intestinal disease, usually typhoid fever, but occasionally cholera and enteritis. In all probability some of the observed instances have not been recorded; and it is possible that many instances in which contaminated shellfish were responsible for the transmission of disease have remained unnoted, because they did not attract the attention of competent observers, or for the reason that the facilities for carrying out

* Read before the New England Health Institute at Concord, N. H., Sept. 28, 1926.

[1] Fourth Report, Royal Commission on Sewage Disposal (Great Britain), Vol. II, Appendix, p. 313. 1904.

the necessary studies were lacking. It is reasonable to assume that a certain amount of disease has been transmitted by shellfish, unobserved, in places where public health work has been backward. Attention has most frequently been attracted by the observation that a large proportion of persons partaking of contaminated shellfish served at banquets became ill about the same time. If the consumption of this same quantity of contaminated food had been spread over a longer time interval, without the contemporaneous infection of so many people, suspicion would not have attached to oysters as early as it did. The number of cases of illness due to eating contaminated shellfish at banquets probably is only a small proportion of the total amount of illness which has been caused by shellfish, particularly in that portion of the population near the sea coasts where it is customary to eat shellfish more freely than in the interior. The source of infection of isolated cases occurring under such conditions is more difficult to trace than it is in cases occurring in an outbreak of epidemic proportions.

In the table on page 2293 are compiled some of the recorded instances in which contaminated shellfish were held responsible for the spread of disease, taken principally from Fuller's[2] recent book, Solving Sewage Problems, and from an earlier paper by Fuller read before the Franklin Institute in 1905.

Other instances are on record in which shellfish are reported to have caused typhoid fever and other illness, but a systematic search of the literature has not been attempted.

At various times in the past there have been periods when the public has lost confidence in the safety of the use of oysters and other kinds of shellfish as a food supply and has refrained from eating them. During such times the careful, conscientious oysterman, whose product was obtained from safe sources and handled in a clean manner, suffered with the less scrupulous producer who took his product from unsafe sources. This has caused among the shellfish industry generally a realization that something must be done to win back public confidence. In England the industry itself has employed competent laboratory men to study the question of pollution and advise precautionary measures. In the Puget Sound area of the State of Washington the industry has voluntarily placed itself under the competent supervision of laboratory authorities and conducts its business on a high sanitary plane. In fact, the more responsible concerns in the industry generally are following this course, and the leaders in the industry have seen the necessity for action on the part of health officials to protect the shellfish-consuming public from the dangers of a contaminated product.

[2] Solving sewage problems. By Geo. W. Fuller. McGraw, Hill & Co., New York City, 1926, p. 110. Fuller, Journal Franklin Institute, 1905, p. 81.

No.	Place	Date	Disease	Authority	Source of contamination
1	France	1815	Typhoid	Pasquier	Fattening grounds receiving sewage from garrison.
2	England (Dunkirk)	1820	Gastro-enteritis	British Medical Journal.	Coast of Normandy.
3	England (Bridgewater and Taunton).	1849	Cholera	General board of health.	Condemned oysters given to children.
4	Isle of Man	1876	Typhoid		
5	Dublin	1889	do	Sir Chas Cameron.	Dublin Bay.
6	England	1892	Cholera	Thorne-Thorne	Clethorpes, Grimsby.
7	Wesleyan	1894	Typhoid	T. F. Conn	Fattening beds in mouth of Quinnipic, 300 feet from sewer line on which were two cases of typhoid.
8	England (Southhampton and Winchester).	1902	21 cases typhoid, 118 gastro-enteritis, 267 guests.	Bulstrode	Oysters from Emsworth.
9	Truro, England	1897	Typhoid, 7 of family ill, some with typhoid, some with gastro-enteritis.	City health officer	
10	Andre de Sangonis, France		14 cases, gastro-enteritis and typhoid fever.	Chantemesse	Sewage-polluted canal at Cette
11	Villages near Paris	1899		Mosny	Oysters from Cette.
12	Monte Carlo	1895		Johnston-Lavis	
13	Naples	1895		do	
14	Florence	1895		Wilson	
15	Milan	1900		Burdoni-Uffreduzzi et al	
16	Constantinople	1902		Remlinger	
17	New Zealand	1902		Mason	
18	Atlantic City	1902	Typhoid	Atlantic City Academy of Medicine	Oysters and clams from polluted beach.
19	Lawrence, L. I	1904	31 cases of typhoid	Soper	Jamaica Bay
20	South-End-on-Sea, England		Typhoid, 50 per cent of local cases due to shellfish infection	Nash	Sewage-contaminated areas
21	Yarmouth, England	(3)	Typhoid	do	
22	Brighton, England	1894-1902	Typhoid, about 37 per cent of cases due to shellfish (158 out of 643 cases)	Newsholm	
23	Manchester, England	1897-1902	About 10 per cent of typhoid cases due to shellfish	Niven	
24	London, England	1902	Over 8 per cent of typhoid fever due to shellfish.	Murphy	
25	New York, Washington, Chicago, and other cities.	1924	Typhoid	Local and Federal health authorities	Oysters.
[2] 26	Connecticut	1926	do	State health authorities.	Clams from contaminated flats.

[1] A typhoid fever epidemic caused by oyster-borne infection. Supplement No. 50, to the Public Health Reports.
[2] Bulletin, Connecticut State Health Department, June 14, 1926, vol. 80, No 24
[3] Prior to 1900.

Why have shellfish suddenly absorbed so much attention from health officials throughout the country, particularly in our large cities? Although the people in this country have been eating oysters since early colonial days, the number of known instances of infection from shellfish has been comparatively small; but the problem of protecting shellfish consumers from infection was bound to become acute sooner or later. Many of the original oyster beds had become exhausted. In order to keep up the supply for the market, it became necessary to cultivate oysters. Naturally the artificial beds were located as close as possible to the labor supply and to the big markets.

Some of the best growing grounds were located in areas receiving an increasing amount of sewage pollution. As the demand for oysters increased, and the area in which oysters could safely be grown decreased, because of the ever expanding pollution areas, the problem became more and more acute and the need for regulation of an effective sort became imperative.

While the attention of vigilant health officials had long been directed to the shellfish problem, public sentiment was not sufficiently aroused until about two years ago (when oyster-borne outbreaks of typhoid fever occurred in New York, Washington, and Chicago[3]), to permit the expenditure of even moderate sums of public money on shellfish sanitation, except in a few localities. Because the consumption of certain shellfish greatly decreased as a result of the publicity attending the outbreak of two years ago, the oyster growers urged that the health officials take action which would restore public confidence in the safety of shellfish as a food. A meeting of the health officials and representatives of the oyster industry was held at Washington in February, 1925. At this meeting the Surgeon General of the Public Health Service was requested to appoint a committee to formulate recommendations for the sanitary control of the shellfish industry in the United States. On this committee were appointed some 18 persons representing the health interests and the commercial interests concerned in shellfish sanitation. This committee submitted a report in September, 1925, which has become the basis of the present policy of the Public Health Service in matters pertaining to shellfish sanitation.

In the language of the committee the essential requirements for insuring the safety and cleanliness of shellfish sold in the market are:

(1) That only those should be marketed which have come from beds which, on careful examination, are found to be free from any justifiable suspicion of dangerous contamination with disease-producing microorganisms, and free from such other contamination as might be deleterious or offensive.

(2) That subsequent to their removal from the water, all the conditions of handling, storage, and distribution should be such as will adequately safeguard the shellfish from—

(*a*) Any dangerous contamination with pathogenic organisms; and

(*b*) Such nonpathogenic contamination, deterioration (spoilage), or adulteration as might render them less fit for food, either hygienically or esthetically.

(3) That thorough epidemiological studies be made of all epidemics where there is ground for any suspicion that shellfish may

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[3] Supplement No. 50 to the Public Health Reports contains a full account of the investigations made of these typhoid fever epidemics.

have been responsible, in order that the sources of infection may be promptly and accurately traced and measures taken to prevent further infections.[4]

In making its recommendations the committee assumed that responsibility for control of the shellfish industry should continue to rest chiefly upon the individual States, and that the requisite coordination and uniformity of control would be achieved by mutual agreement between the States, with such assistance and cooperation as existing Federal bureaus could render. It was believed that such a plan would be feasible for immediate operation, since each State had, or might easily provide, the necessary statutes, administrative agencies, and organizations for carrying out, within its own area, all control measures which might reasonably be required.

The States possess the police power to enforce such regulations as are required, and are willing to protect their own citizens and the citizens of other States from contaminated shellfish.

The shellfish sanitation program as now being worked out through the cooperation of the Public Health Service with the various States will ultimately protect all persons, and the shellfish consuming States will be protected against firms who do not meet the minimum requirements as outlined by the committee above referred to, because such firms will not be able to obtain certification for interstate shipment. This plan depends ultimately for its effectiveness upon the vigilance exercised by health officials in the consuming centers, in excluding from their markets shellfish from uncertified shippers, thus depriving such dealers of a place in which to sell their product. Some of the producing States have as yet failed to provide adequate machinery for control and certification of shellfish shippers. As a result, the principal markets are gradually being closed to the firms in these States. Some dealers who have been unable to obtain certificates from their own States have continued, however, temporarily to ship shellfish without a certificate; in this way material that was intended to be kept from the markets has found its way to the consumer. But to bring about completely the result contemplated under the certification scheme, it is necessary for the local health officials in shellfish consuming centers to guard against "dumping" of shellfish upon their markets by shippers who are not certified. Thus the health officials, particularly the local health officials, in all States have a new duty thrust upon them; namely, that of seeing that shellfish from uncertified sources are not "dumped" upon them as a result of having been excluded from other markets. This is true of shellfish producing States as well as for shellfish consuming States, because producing States are also consuming States.

[4] A full report of the committee was printed in Supplement No. 53 to the Public Health Reports, Nov. 6, 1925.

Oysters thrive best in a mixture of fresh and salt water. Consequently, the best oyster-producing grounds are in tidal estuaries into which fresh water streams discharge, bringing quantities of food consisting of minute animal and vegetable forms of life. In order to obtain its food the oyster is obliged to pass large quantities of water through its gills, straining out of the water the small food particles contained therein. It is in this way that contamination from polluted water is introduced into the oyster.

As long as our fresh-water streams remained uncontaminated, the oysters remained uncontaminated and constituted a safe food. However, a common method of disposing of the sewage of both large and small cities and towns located on the sea coast is to discharge it, untreated, or partially treated, into a nearby arm of the sea, in which the quantity of water is sufficiently great to prevent a local nuisance from arising.

This eventually results in contaminating oyster grounds sufficiently close to the point of discharge to be affected. In some localities the treatment of sewage has been undertaken principally to protect local shellfish grounds from pollution. Since sewage treatment works involve the expenditure of considerable sums of money for their construction and operation, it follows that the construction of such works is warranted, from an economical standpoint, only in places where the shellfish industry is of considerable importance and extent. At Providence, R. I., according to Metcalf and Eddy [5] the treatment of sewage with chlorinated lime to destroy disease-producing organisms was instituted to protect the extensive shellfish industry in Providence River. At Baltimore [6] a desire to protect the extensive shellfish industry near that city was one of the reasons that modern sewage treatment works were constructed.

At other places along the coast, treatment of sewage has been brought about, or may in the future be brought about, to protect shellfish grounds, bathing beaches, and harbor waters from gross pollution. While such a procedure may retard the extension of polluted shellfish growing grounds, it probably will not result in reclaiming any considerable areas now closed because of sewage contamination. The shellfish supplies of the future must be obtained from waters now reasonably clean and which can be kept from becoming seriously contaminated.

Under adequate regulation and supervision, preferably administered by State health agencies, the usefulness of sewage-contaminated waters may not be lost entirely to the shellfish industry. Some of these areas are good producers of seed oysters, which may be transplanted to clean areas for development and maturing. Much

[5] Metcalf and Eddy: American Sewage practice, vol. III, p. 751.
[6] Id. p. 29.

danger attends this practice, however, unless the taking of seed oysters from such contaminated areas is carefully controlled by stringent regulations strictly enforced. It also has been found that even mature oysters may be taken from contaminated areas, relayed in clean waters, and, after the elapse of certain periods of time, be taken up and marketed safely. This practice is fraught with even greater danger than the practice of taking seed oysters from sewage contaminated areas, because the oysters may not be allowed to remain in the clean waters sufficiently long or may indeed not be laid down in clean waters at all, but be sent directly to the market by those who do not realize the dangers attending such a practice. In order that the oyster may free itself from acquired impurities, relaying should be limited to a time when the temperature of the water is above or not far below 60° F. When the water is above this temperature the activity of the oyster is much greater than when the water is colder, and the chances that it will free itself in a given time from any pollution it may contain are correspondingly greater.

Experiments by various observers show that contaminated oysters rapidly improve when relaid in clean waters during their active feeding season.[7]

In studying the pollution of shellfish growing areas, some observers have found that, at times, the results of bacteriological examinations of shellfish and of the waters over the shellfish were inconsistent, safe oysters being found at times in polluted waters. Because the oyster must obtain its food material from the water in which it grows, and is therefore liable to pollution at any time, it is believed by some observers that examinations made of the water at frequent intervals furnish a more satisfactory basis for determining the safeness of the oyster growing areas than the same number of examinations of oysters, or oysters and water.

There has grown up in the oyster industry a practice of so-called "fattening" oysters by taking them from the waters in which they have grown and storing them for short periods of time in waters containing less salt than that of the oyster producing areas. When the oyster is placed in the fresher water, osmosis takes place, the fresh water penetrating the oyster tissues so that the oyster becomes plump, or "fat." Serious consequences have resulted from this practice when the "floating" water was contaminated with pathogenic organisms. Probably most of the larger outbreaks of typhoid

[7] Shellfish and the bacilli of typhoid. A note on E. Klein's investigation, for the Fishmongers Co., of the time required by oysters to clean themselves of bacilli. British Food Journal, 7 (1905): 48. Experiments and observations on the vitality of the bacillus of typhoid fever and of sewage microbes in oysters and other shellfish (Review). Lancet, 2 (1905): 1113-1114. Foote, Chas. J.: Report of Connecticut State Board of Health, 1895, p. 189. Phelps, E. B. (1911): Some experiments upon the removal of oysters from polluted to unpolluted waters. Journal American Public Health Association, 1: 305.

fever ascribed to oysters have been due to this practice. Because of this danger, most oyster producing States have prohibited the practice entirely.

An effort is now being made by some oyster producers to chlorinate the water in which the shellfish are stored before they are shipped to the market. This method of providing clean water in which to store shellfish has advantages to recommend it whenever it is desirable to store shellfish between the time they are taken from the growing beds and the time they are shipped to market. When the oysters are active, or "drinking," a certain cleansing results from their being placed in the chlorinated water.

But the practice of taking oysters from contaminated areas and attempting to make them safe for consumption by placing them in chlorinated water in storage tanks is not yet regarded as a safe procedure. It may be said to have its counterpart in the practice of pasteurizing dirty milk.

As an additional safeguard to be employed in connection with oysters produced in safe growing areas, chlorination has a considerable degree of usefulness, and is somewhat comparable to the pasteurizing of milk under proper sanitary conditions. Further experimentation with the so-called chlorination of oysters may demonstrate a wider usefulness of the practice in the future.

The methods at present employed to safeguard the quality of shellfish intended for consumption are as follows:

Each shellfish-producing State continues to exercise supervision over the shellfish industry within its borders. It enacts such statutes, adopts such regulations, and sets up such administrative machinery as it deems advisable and desirable or necessary. In some States this activity is a function of the State health department; in others, it is a function of some other branch of the State's administrative machinery. In some States the work is carried on by a conservation commission, fish and game commission, shellfish commission, or agricultural department. The State agency having jurisdiction over its shellfish industry examines the waters in which shellfish are grown, prohibits the taking of shellfish from waters it finds to be unsafe, licenses persons who are permitted to take shellfish, inspects the establishments in which shellfish are prepared for the market, examines the personnel engaged in the packing and shipping of shellfish, and issues certificates to shippers who have complied with all the regulations prescribed by the State. It then submits copies of these certificates to the Public Health Service engineer in charge of the Federal interstate sanitary district in which the State is located. An inspection is then made of the plant. If, in the opinion of the public Health Service representative, the State machinery necessary to enforce the States' regulations is adequate and is efficiently administered,

and if the State regulations themselves are sufficiently stringent, it is recommended that the name of the person to whom the certificate has been issued be placed on a list of shippers approved by the Public Health Service. Copies of this list are issued at semimonthly intervals and are sent to the health authorities in the various States for their information. The State health officers are also supplied with an opinion concerning the adequacy and the efficiency of State control measures.

This method of procedure employs no coercive measures on the part of the Public Health Service, and limits its actual control measures to those implied by its refusal to place the name of an unsatisfactory shipper upon its approved list. This results in placing all oyster shippers in one or two classes; first, those shippers who have complied with all the State's regulations and whose certificates have been approved by the Public Health Service, and, second, those who have not complied and have not been approved. It is the obvious duty of health officials in all shellfish-consuming centers to avail themselves of the protection which this system affords by seeing to it that shellfish shipped by uncertified dealers are excluded from their markets.

The present plan, by which it is hoped to prevent contaminated shellfish from getting on the market, depends for its success upon willing cooperation, first, from the State authorities having jurisdiction over the shellfish industry in the respective shellfish-producing States, and, second, from the health authorities in the shellfish consuming States. These must see that shellfish coming only from properly certified shippers are admitted to their markets. This is a very important point. Responsibility in this matter rests principally upon the health authorities of our cities, for our cities are our principal markets for shellfish. If shellfish shipped by uncertified shippers are not excluded from the markets, the unscrupulous shipper will take advantage of the opportunity left open. They will soon discover that they can dispose of their products without obtaining a shipper's certificate and the shellfish that should be excluded will flow freely to market without hinderance. Lasting and substantial growth and development of the shellfish industry must in the end be based upon principles that take the welfare of the consumer into consideration.

The shellfish industry has shown, as a whole, a willingness to cooperate with the requirements laid down by health officials, and it is hoped that this spirit of cooperation will continue indefinitely. The industry should, however, avoid a tendency toward over-capitalization of the protection which is being afforded by sanitary supervision. From advertisements appearing in some of our daily papers recently it seems that there is a tendency among some shellfish producers to take advantage of the present certification scheme by leading the public to believe that the the State and Federal Governments

now certify to the quality of all oysters offered to the public. This is not really the case. In the first place the certificates refer only to the source of the oysters and the manner of their packing for shipment at the point of origin. No responsibility is assumed for what may take place between the time the oysters leave the original shipper and the time they are purchased by the consumer from the retail dealer. The oysters do not reach the consumer in the original unbroken packages filled at the point of origin, except in isolated instances. In the second place, an appreciable quantity of shellfish are consumed without getting into interstate commerce and, therefore, without necessarily coming under the certification plan at all. This is particularly true with reference to clams, but it applies to other shellfish also. Further, some shellfish from unapproved sources may be surreptitiously placed on the market, both locally and in interstate shipments. The public should be advised that the oysters themselves are not inspected and certified, as is the case with meat.

SUMMARY

1. From the evidence submitted by various competent observers it is clear that shellfish have been responsible for the transmission of a considerable amount of typhoid fever and gastroenteritis.

2. In order to safeguard the shellfish-consuming public from contaminated shellfish, effective sanitary control measures must be exercised over the shellfish industry.

3. The responsibility for enforcing the necessary control measures rests primarily upon the individual States in which shellfish are produced. The States issue certificates to shellfish producing concerns.

4. The Public Health Service cooperates with the various State agencies, specifies the minimum requirements for approval of certifications, and advises the State health officials concerning the adequacy and efficiency of State control measures.

5. It is incumbent upon local health officials to see that their communities are protected, by excluding shellfish shipped by firms not holding approved shipper's certificates. The ultimate success of the present certification plan will, in a large measure, depend upon the effectiveness with which it is done.

CURRENT WORLD PREVALENCE OF DISEASE

REVIEW OF THE MONTHLY EPIDEMIOLOGICAL REPORT ISSUED JULY 15, 1927, BY THE HEALTH SECTION OF THE LEAGUE OF NATIONS' SECRETARIAT[1]

Plague.—The plague incidence was unusually low during the spring months of the current year in the great majority of countries in which the disease was more or less prevalent, according to information

[1] From the Office of Statistical Investigations, U. S. Public Health Service.

furnished to the health section of the League of Nations' Secretariat and published in the Monthly Epidemiological Report for July. In India, fewer cases had been reported up to May 14 than in the corresponding season of any previous year. "The maximum was passed during the last week of March in Bihar and in the eastern part of the United Provinces," states the Report, "and during the third week of April in the Punjab and in the western part of the United Provinces." The deaths from plague reported for the whole of India numbered 2,315 in the week ended April 2 (maximum week), but the total declined to 544 in the week ended May 14, as against 7,467 during the week ended May 15, 1926.

In French Indo-China only 21 cases of plague were reported between April 1 and June 20, and in Siam 8 cases were reported in the eight weeks ended May 21.

An outbreak of plague at Kwang-chow-wan resulted in 17 cases in April, 59 cases in May, and 26 cases in the first 10 days of June.

Most of the Asiatic ports were free from plague during the eight weeks ended July 16. Colombo reported 11 cases during this period and Bangkok reported 1 case. Bassein, Bombay, and Rangoon reported, respectively, 35, 31, and 22 deaths.

There were no cases of plague at Suez during the first six months of the current year, and only 4 cases at Port Said. A total of 40 cases was reported in Egypt during the first five months of 1927.

In Tunis, an outbreak of plague occurred in May, and 126 cases were reported during the month, but only 5 cases were reported during the first 10 days of June. One case of plague was notified in Algeria in May, the first since January.

The plague incidence in Madagascar showed a marked decline: 156 cases were notified in April, 78 in May, and 16 in the first half of June.

In Senegal, plague made its usual seasonal appearance in March, and the number of cases increased from 55 in April to 125 in May. In Nigeria, also, the cases increased from 35 in March to 99 in April.

The government of Ouralsk, in the Union of Socialist Soviet Republics, reported 16 cases of plague and 13 deaths as occurring in the autonomous area of Kasakstan between May 22 and June 4.

Cholera.—Marked improvement in the cholera situation as compared with last year is noted in Siam, Cambodia, Cochin-China, and Laos. The disease was epidemic, however, in Tonkin, where there were 1,356 cases in April and 2,904 in May. An outbreak in Annam occurred in May, with 535 cases during the month. In both Annam and Tonkin, the incidence continued to increase during the first half of June.

In India, cholera was more prevalent during April and May than during the corresponding months of the two preceding years, but

much lower than in 1924. The sudden marked outbreak in the southern part of Bombay Presidency, which began in March, decreased slowly after the middle of April, but spread to other districts in the Presidency. An increase in cholera occurred during April in a number of other Provinces, including Bengal, Bihar, the United Provinces, and the Punjab.

TABLE 1.—*Cholera deaths reported in the Provinces of India from March to May, 1926 and 1927*

Province	1926			1927		
	Feb 21–Mar. 20	Mar. 21–Apr. 17	Apr. 18–May 5	Feb. 20–Mar. 19	Mar. 20–Apr. 16	Apr. 17–May 14
Punjab and Delhi	0	2	0	0	4	201
United Provinces	167	260	354	35	130	1, 885
Bihar and Orissa	950	2, 269	2, 691	358	1, 416	3, 697
Bengal	2, 395	5, 151	2, 533	1, 656	2, 096	2, 740
Assam	55	290	644	68	361	261
Central Provinces	236	112	137	377	383	301
Madras Presidency	1, 723	1, 003	421	1, 498	1, 130	1, 367
Bombay Presidency	5	1	1	38	4, 713	3, 821
States in Bombay Presidency	0	0	0	0	303	535
Burma	125	533	722	250	228	246
Other Indian States	0	1	44	0	35	85
Total	5, 656	9, 622	7, 547	4, 280	10, 799	15, 130

In the five weeks ended June 25, there were five cases of cholera reported at Canton, China, and one case at Shanghai.

Yellow fever.—Five cases of yellow fever were reported in Senegal in May, the first cases since early in January. Concerning the earlier cases in Senegal, the Report gives the following information:

The reappearance of yellow fever in Senegal and in certain parts of French Sudan which occurred in October, subsequent to the arrival of a convoy of 200 Syrians, seems to have come to an end during the first days of January. Sixteen Syrians and 18 Europeans were attacked; 15 of the former and 14 of the latter died. There were further 19 suspected cases (10 Europeans and 9 Syrians), of which 12 died. All the Syrians and most of the Europeans were fresh arrivals.

Between May 22 and June 26, in the district of Tivaouane, there were 14 fatal cases of yellow fever. Several cases occurred also at M'bour but none at Rufisque during this period.

In Togoland there were six fatal cases at Lome between May 7 and 26 and one at Anecho. In Dahomey, at Porto Novo, there were two deaths from yellow fever, one on May 26 and one on May 29, but no further case had been reported up to June 17.

In the Gold Coast, where there were 69 cases from February to May, inclusive, the disease has been more prevalent than for six or more years.

Smallpox.—There were 62 cases of smallpox notified in France in May, approximately the same as for several months preceding. "From September to May, 591 cases were reported in 15 De-

partments," states the Report. "The prevailing type is very severe; the case mortality rate was 33 per cent among 214 cases treated in a Paris hospital."

The smallpox incidence in Algeria increased during the spring months, and 315 cases were reported in May, compared with 253 in April and 207 in March. Very few cases of smallpox occurred in either Tunis or Egypt.

In England and Wales the seasonal decline in smallpox continued during June, but the incidence remained higher than in preceding years; 462 cases were reported in the two weeks ending June 18.

A severe outbreak of smallpox is reported from northern Nigeria, where there were 928 cases and 180 deaths during April.

Smallpox continued unusually prevalent during the spring in Bengal, and Bihar and Orissa, but its incidence was not above normal in the United Provinces and the Punjab. The total number of cases reported in British India during the two weeks ended May 14 was 15,526.

Typhus and relapsing fever.—The incidence of typhus in the countries west of the Union of Socialist Soviet Republics during the first four or five months of 1927 differed but little from the preceding year. Only in Rumania was the disease more prevalent than at the corresponding season of the preceding two years.

In the Ukraine, both typhus and relapsing fever were distinctly less prevalent than in preceding years. During the first quarter of 1927, 2,376 cases of typhus and 248 cases of relapsing fever were reported, as compared with 4,049 and 418 cases, respectively, during the first quarter of 1926.

In Morocco, 272 cases of typhus were notified in May, a slight increase over April. In Algeria, the cases reported in March, April, and May exceeded any monthly totals since 1923.

A small outbreak of relapsing fever in the Gold Coast in March and April caused 88 cases and 5 deaths.

Enteric fever.—The seasonal increase in enteric fever became apparent in the reports for the month of May for a number of European countries, and the Report makes the following comment:

The summer rise of enteric fever usually begins in June or occasionally in May, although it attains its full height only in late summer or autumn. This year, the returns for May showed evidence of rising incidence in many countries. More cases were reported in May than during the corresponding month of the two previous years in England, France, Germany, Poland, Czechoslovakia, Austria, and Hungary. In Italy, where enteric fever was exceptionally prevalent in late autumn, the incidence, though decreasing, remained higher than in previous years.

Natality and general mortality.—Statistics on birth and death rates in certain European countries in 1925 and 1926 and for three quin-

quennial periods of the twentieth century are presented in this Epidemiological Report with comment, in part, as follows:

The decrease of the birth rate, which in most countries dates back to the latter part of the nineteenth century, was arrested during a few years subsequent to the war but recommenced about 1921. Such data as are now available for 1926 indicate that this decrease continues and is likely to continue for a number of years. The area of low birth rate—between 17 and 20 per 1,000—now includes almost the whole of northern, western, and central Europe. The rates are considerably higher in southern Europe, while the birth rate is still between 35 and 40 in eastern Europe. The birth rate is now lower in Sweden and in England than in France. In Germany, where a little over 20 years ago the birth rate was about 60 per cent higher than in France, it now exceeds only very slightly the rate for the latter country.

The decrease of the death rate has in a large measure made up for the fall in the birth rate, so that the population continues to increase in all European countries. The natural increase of 14 per 1,000 in the Netherlands, resulting from a birth rate of 23.8 and a death rate of 9.8, is thus nearly as high as the increase of the population in Egypt, where the birth rate is about 43 per 1,000, and is obviously more favorable both from a humanitarian and an economic point of view. The pressure of population growth is beginning to lessen, however, especially in Great Britain, Germany, Switzerland, and in the Scandinavian countries.

The year 1926 was characterized by a low death rate in most European countries; there was no important epidemic outbreak and no disturbance which could affect the death rate.

TABLE 2.—*Birth and death rates per 1,000 of the population in certain European countries, 1901–1926*

Country	Birth rate					Death rate				
	1901–1904	1910–1914	1920–1924	1925	1926	1901–1904	1910–1914	1920–1924	1925	1926
England	28.4	24.3	21.3	18.3	17.8	16.2	13.9	12.2	12.2	11.6
Scotland	29.3	25.9	24.3	21.3	20.9	17.3	15.3	14.0	13.4	13.0
Norway	28.9	25.4	23.5	20.0	19.7	14.5	13.4	11.8	10.9	10.6
Sweden	26.2	23.7	20.3	17.5	16.9	15.4	13.9	12.4	11.7	11.8
Denmark	29.2	26.4	23.1	21.1	20.5	14.8	12.9	11.7	10.9	11.0
Netherlands	31.8	28.2	26.5	24.1	23.8	16.2	13.0	10.8	9.6	9.8
Germany	34.7	28.2	23.1	20.6	......	19.9	16.6	13.9	11.9	......
France	21.4	19.0	20.1	19.1	......	19.6	18.1	17.5	17.7	......
Spain	35.3	31.2	30.3	29.3	29.9	26.2	22.3	21.1	19.4	19.0
Italy	32.6	32.0	29.9	27.5	......	21.9	19.2	17.4	16.6	......
Hungary	37.4	35.0	30.0	28.3	26.7	25.8	23.6	20.7	17.1	16.5
Czechoslovakia	35.5	29.8	27.3	25.1	24.5	24.1	20.2	16.9	15.2	15.6

PUBLIC HEALTH ENGINEERING ABSTRACTS

The Largest European Water-Supply System. How the German Government Furnishes Water for 100 Communities. Translated from the German (*Siemens-Zeitschrift,* October, 1925) by John H. D. Blanke. *Water Works Engineering,* vol. 79, No. 16, August 15, 1926, pp. 1037–1038. (Abstract by Arthur P. Miller.)

The German government-owned water supply system Nieder-Stotzingen is the largest water-supply system on the European Continent. It furnishes water to 100 cities and communities with a population of about one-half million. The system covers 1,700 square miles and the most remote town from the Nieder-Stotzingen pumping station is 65 miles away.

The source of the water is the ground water flow in the bed of the Danube River. From this source the water is taken through two rows of wells, one containing 49 wells and the other 78. The wells are about 164 feet apart with inside diameters of 19.68 inches and 39.37 inches. Some are as deep as 52 feet. Well suction lines are connected to withdrawal lines and they in turn lead to the collecting pumping station. This station forces the water to the Nieder-Stotzingen pumping station, which cares for the distribution over the territory.

The remainder of the article is devoted to pumping equipment and a discussion of lines, pressures, and construction.

Public Water Supplies of Maine. Elmer W. Campbell. *Journal New England Water Works Association,* vol. 41, No. 2, June, 1927, pp. 99–128. (Abstract by Arthur P. Miller.)

This paper is the third of a series presenting statistical information on the public water supplies of the New England States. It covers only such supplies in the State of Maine.

As a sample of the material included, the following quotation concerning the Bethel Water Co. at Bethel, Me., is given: "Supplies a population of around 1,792; water flows by gravity from a mountain brook to two covered concrete reservoirs; total capacity, 650,000 gallons; 7½ miles of mains; color, 10; hardness, 20; chlorides, 4; sanitary quality of water, excellent."

How Water-Supply Improvements Have Reduced Typhoid Fever Rate. H. Burdett. *Water Works Engineering,* vol. 80, No. 12, June 8, 1927, p. 780. (Abstract by Frank Raab.)

In 1908 there were 15 filter plants in New York State. In 1924, 26 supplies were filtered. Besides these, 18 other cities were chlorinating their supplies. During this period the typhoid fever death rate fell from 24.2 to 3.8, a reduction of more than 80 per cent. Since 1924 the typhoid fever death rate has continued downward in all cities which are supplied with purified or chlorinated water. Better milk supplies and other sanitary measures are also given credit for the reduced typhoid fever death rate.

Is the Treatment of Water or Sewage of Greater Importance? Paul Hansen. *Water Works Engineering,* vol. 80, No. 9, April 27, 1927, pp. 565–566. (Abstract by W. L. Havens.)

The aim of this article is to point out that the general problem involves striking a safe and economic balance between sewage treatment and water purification. Reference is made to the tentative standard of the International Joint Commission of 500 *B. coli* per 100 c. c. as the maximum proper for a satisfactory raw water. From the studies of Streeter is drawn the conclusion that the chlorination of filtered water was found necessary when the *B. coli* content of raw water exceeded 100 per 100 c. c. The paper suggests that a water which is offensive esthetically or which is impracticable as a source of supply may be fixed as a water containing 50,000 *B. coli* (or more) per 100 c. c., although such a water may support fish life and the pollution may not be markedly perceptible to the senses.

Filtration and sterilization of water are recommended as the major defense rather than reliance upon sewage treatment.

Dual Water Supplies. A. L. Dopmeyer. Proceedings Ninth Texas Water Works Short School, January 24–29 1927, pp. 120–125. (Abstract by E. S. Tisdale.)

The industrial dual system is demanding increased attention of the public health officials. Reference is made to action taken by several groups, the conference of State sanitary engineers, the American Water Works Association, and the fire protective committee of the Fire Underwriters' Association, against the practice of permitting physical connections between safe and unsafe water supplies. Reference is also made to the comprehensive studies throughout New York State and in the city of Chicago of the cross-connection evil. The improvements which have been brought about since these studies, indicated the extreme prevalence of cross connections in the large cities. The elimination of cross connections is a task which faces the State sanitary engineers in practically every State and still causes much mysterious water-borne typhoid fever.

Each Section of Tennessee has Own Water-Supply Problem. Howard R. Fullerton. *Water Works Engineering*, vol. 80, No. 11, May 25, 1927, pp. 701-702. (Abstract by W. L Havens.)

From topographical, mineral, agricultural, and geographical standpoints, the State of Tennessee is naturally divided into three divisions, and consequently the water supplies of the State may be grouped under three general classifications In the eastern section of the State practically all the supplies are from springs or streams, and in some cases a potable supply can be produced with chlorination only, while in others filtration, and even softening, is necessary.

In the limestone formations in middle Tennessee, well supplies are prevalent and chlorination is usually necessary for their protection Nashville, Columbia, and Shelbyville secure their supplies from rivers and resort to coagulation, sedimentation, filtration, and chlorination.

In western Tennessee most of the municipal supplies are obtained from wells which are impregnated to a more or less degree with sulphur and iron, and therefore require special treatment for the removal of these unsatisfactory materials.

Each of the larger plants in the State is visited twice each year by a sanitary engineer, who instructs the superintendent in the scientific operation of the plant Although only a few of the plants are now doing bacteriological work, this type of control is being recommended.

A Texas Water-Supply Enlargement Problem Involving a Dual Distribution System. N T. Veatch, jr. Proceedings Ninth Texas Water Works Short School, January 24 29, 1927, pp. 59–63. (Abstract by E. S. Tisdale.)

The question of the advisability of distributing water to a community by a dual system may arise in certain parts of this country, particularly in the southwest where large quantities of water are used for irrigation purposes.

Wichita Falls, Tex., is cited as a city where the relative economy of dual systems will probably have to be considered seriously as the city grows. Lake Wichita, the source of the present water supply, could furnish a satisfactory soft water for domestic purposes in the future provided another source of supply, possibly Lake Kemp, which furnishes water which is saline and very hard, might be utilized for irrigation and fire fighting purposes.

The relative costs on single and dual systems are set forth in the article and following conclusions drawn: (1) Dual systems are more expensive in first cost and in operation than single systems, because of the duplication of pipe lines, services, pumping plant, and accessories; (2) some unusual situation such as the inadequacy of a suitable water supply, together with an unusually high cost for

an additional supply or excess treatment costs, must exist before a dual supply can be economical.

Treatment of Pea Cannery Wastes. C. M. Baker, L. F. Warrick, and J. P. Smith. Report concerning the cooperative investigation conducted by the Wisconsin Canners' Association, State Conservation Commission, and State Board of Health at Poynette, Wis., June, July, 1926. 50 pages. (Abstract by Arthur P. Miller.)

This report published by the Wisconsin State Board of Health, presents the "details of an experimental investigation concerning the efficiency and practicability of chemical treatment in removing substances from pea cannery wastes that cause local nuisances and objectionable stream pollution."

An experimental plant was constructed and operated at the pea cannery of the Poynette Canning Co., and consisted of a rotary screen, chemical feed devices, mixing facilities, chemical precipitation tank, sludge pumping and drying equipment, and apparatus for flow measurements.

Forty-six pages are devoted to a description of the pea cannery wastes; past investigations and preliminary laboratory studies, experimental plant (including sketches and photographs), operation and analytical control of treatment plant, and the operating results. The effect of the treated wastes on the stream and the proposed design, with a cost estimate, for treatment of these wastes, are discussed in full.

The conclusions from this experimental work are quoted in full: (1) By careful operation and the application of about 3¼ pounds of ferrous sulphate and 7¼ pounds of lime per 1,000 gallons of waste, the oxygen demand can be reduced approximately 75 per cent; (2) if the sludge is allowed to accumulate in the tank, the oxygen demand reduction averages only 34 per cent, because the precipitated organic matter partially goes into solution and is carried through the tank; (3) the sludge may be easily removed from the tank with a gasoline motor-driven diaphragm pump. It will dry rapidly on sludge beds and has a fertilizer value estimated at $3 50 per ton; (4) aeration of the tank effluent will effect a further reduction in the oxygen demand, approximately 50 per cent being indicated by laboratory tests; (5) the chemical treatment will materially reduce stream pollution and prevent local nuisances created by untreated pea cannery wastes; (6) the cost of a complete treatment plant for a two-line cannery, discharging wastes at a maximum rate of 100,000 gallons per day, is estimated at $2,000 to $2,800, with a total daily cost of operation of $13 to $15.

Where pea canneries are causing unsatisfactory conditions, chemical treatment plants are recommended. Further investigations were found desirable along the following lines: (1) A thorough study of operating technique in order to develop practical control tests and methods in operation of such treatment plants; (2) full size plant studies to determine the efficiency and practicability of aeration of the chemically treated wastes; (3) studies in regard to utilization of the wastes, particularly the silage juice and blancher wastes, because of the large amount of carbohydrate present and of the screenings with respect to drying and use as feed for chickens or other fowls, and stock.

Elimination of Pollution. Chapter IV, 1926 Report of Passaic Valley Sewage Commissioners, Newark, N. J., pp. 55–89. (Abstract by J. K. Hoskins.)

The Passaic Valley trunk sewer, extending along the west bank of the Passaic River in New Jersey, from Paterson to New York Bay, a distance of 26.74 miles, was constructed to relieve the excessive pollution of the river and Newark Bay. The works cost over $20,000,000 and were first placed in operation in 1924. The present chapter discusses the improved condition effected in the river and in Newark Bay, and the present degree of pollution of upper New York Bay.

A series of 16 sampling stations was established, from which samples were collected for a year prior to the completion of the sewer and continuously since that time for the purpose of ascertaining changes in the dissolved oxygen content. These analyses are presented in the form of yearly and summer averages. Minimum saturation figures are not given. Many of the data are illustrated by graphs.

The interpretation placed on the data as summarized is as follows: "It does not appear that the discharge of Passaic Valley sewage has, during the two years of operation, lowered the dissolved oxygen content of the whole upper New York Bay.

"Our oxygen determinations show such small and inconsiderable depletions due to the discharge of Passaic Valley sewage that we have completely lived up to the terms of this stipulation (interference with major fish life) regarding dissolved oxygen."

Absence of suspended matter, sewage odors, and grease, and practical absence of color, are also claimed.

The improvement of pollution conditions in Newark Bay and in the Passaic River, as measured by the dissolved oxygen content, is increasing. Thus at the mouth of the river (head of the bay) the average per cent saturation of oxygen has increased from 25.2 in 1924 to 49.3 in 1926. Summarized results of other sampling points are presented. The highly industrial nature of the valley is also briefly discussed.

Eliminating Pollution from the Great Lakes and St. Lawrence Waterways—The Great Lakes. Allan J. McLaughlin *American Journal of Public Health*, vol. 17, No. 5, May, 1927, pp. 454–457. (Abstract by D. W. Evans.)

In 1910, after several years of intense study of Asiatic cholera, the author was assigned to study the sewage pollution of interstate and international waters and the spread of typhoid fever.

Sanitary surveys, including the mapping of sewer systems and outfalls and their relation to waterworks intakes, the location, type, and efficiencies of filter plants, and the typhoid history of towns, with stress on the seasonal prevalence of typhoid fever, were completed by July, 1911, for all towns on the American side of the Great Lakes drainage basin. Excessive prevalence of typhoid fever occurred in winter and spring, due in large measure to unrestricted discharge of sewage or inefficiency of purification of the water. Remedies for purification called for (1) safe water supplies as shown by bacteriological tests; (2) supervision and control of water supplies by States; (3) control of sewage discharge within permissible limits; (4) prevention of pollution by vessels.

Standards for raw, filtered, or treated waters were recommended in order to secure uniform results.

During the period April to November, 1913, work extended over the entire basin, 19,000 samples being secured from 1,400 points and examined bacteriologically. The report on this survey shows the degree or intensity of pollution. It was shown that the present position of intakes is such that not a single town can be said to possess safe water without treatment.

Relation Between Ripe Sludge and Fresh Solids. Willem Rudolfs. Proceedings of Ninth Texas Water Works Short School, pp. 367–369. (Abstract by H. H. Rashid.)

Under given conditions and when these conditions are not changed artificially, there exists a definite relationship between ripe sludge and fresh solids.

Laboratory experiments under controlled conditions to determine the optimum amount of fresh solids which can be handled by a given quantity of ripe sludge have shown that for proper sludge digestion not more than two per cent of fresh solids should be added to the ripe sludge. The addition of greater amounts

resulted, apparently, in upsetting the biological balance and causing irregularities; moreover, the bacterial numbers became very erratic, acidity increased and decreased rapidly, gas production became spasmodic, and protozoa increased enormously and would disappear over night. When 4 per cent were added, odors became very pronounced, while the addition of 2 per cent of the fresh solids (on dry basis) resulted in a remarkably smooth curve for bacteria when plotted as well as for solids reduction, and a fairly even gas production with no odors attending. When dealing with industrial waste, greater effective sludge capacities are needed, as the waste contains comparatively large amounts of grease, which is difficult to digest with the present means of anerobic tanks. The apparent digestion capacity of a given tank can be increased more than 60 per cent by carefully controlling the sewage flow so that no more than the calculated amount of settleable solids reaches the tank, and by keeping the reaction of the tank at its optimum for digestion which is expressed in pH values from 7.3 to 7.6. Other considerations which require further study are the combination of aerobic and anerobic decomposition, as well as the biophysico-chemical combinations.

Eliminating Pollution from the Great Lakes and St. Lawrence Waterways—Lake Erie and the Niagara River. J. W. Ellms. *American Journal of Public Health*, vol. 17, No. 5, May, 1927, pp. 457-459. (Abstract by D. W. Evans.)

Pollution of Lake Erie involves two phases; namely, pollution at inlet and outlet and pollution opposite centers of dense population on or near its shores. At the inlet, contamination is derived from cities on both sides of Detroit River. At the outlet, pollution is chiefly from sewage of cities on the American side of Niagara River.

Along the shores on the American side, the cities of Toledo, Cleveland, and Akron contribute large volumes of sewage directly or indirectly. The amount of sewage treated is relatively small.

The greatest pollution is found in the Detroit and Niagara Rivers. Detroit and suburbs discharge an estimated volume of 225 m. g. d. of sewage and trade waste into the Detroit River through 50 outfall sewers. Detroit has a comprehensive plan for a sewer system and treatment, but nothing has as yet been done toward construction. Buffalo contributes 100 m. g. d. of sewage into the Niagara River without treatment. Cleveland discharges 115 m. g. d. directly to the lake, only 20 per cent of which is treated. Chlorination is provided during the bathing season.

Depreciation of lake-front property due to gross pollution is awakening the public to the needs for more sewage treatment.

DEATHS DURING WEEK ENDED SEPTEMBER 3, 1927

Summary of information received by telegraph from industrial insurance companies for week ended September 3, 1927, and corresponding week of 1926. (From the Weekly Health Index September 8, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Sept. 3, 1927	Corresponding week 1926
Policies in force	67, 993, 257	65, 208, 233
Number of death claims	10, 382	10, 557
Death claims per 1,000 policies in force, annual rate	8. 0	8. 4

Deaths from all causes in certain large cities of the United States during the week ended September 3, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, September 8, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Sept. 3, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Sept. 3, 1927 [2]
	Total deaths	Death rate [1]		Week ended Sept. 3, 1927	Corresponding week 1926	
Total (67 cities)	5,934	10.5	[3] 10.9	681	[3] 899	[4] 56
Akron	37	------	------	5	6	54
Albany [5]	27	11.7	12.3	4	1	83
Atlanta	51	------	------	5	8	------
White	26	------	------	1	3	------
Colored	25	(6)	------	4	5	------
Baltimore [5]	169	10.8	11.7	31	25	93
White	122	------	10.2	18	18	69
Colored	47	(6)	20.2	13	7	202
Birmingham	58	14.1	14.6	8	14	------
White	28	------	10.2	4	6	------
Colored	30	(6)	21.4	4	8	------
Boston	206	13.5	12.5	34	39	95
Bridgeport	24	------	------	1	3	19
Buffalo	126	11.9	11.4	11	20	46
Cambridge	14	5.9	11.5	3	7	53
Camden	21	8.2	8.8	5	4	86
Canton	21	9.7	9.5	1	2	24
Chicago [5]	594	10.0	10.3	52	73	45
Cincinnati	103	13.0	13.6	13	19	81
Cleveland	156	8.3	9.8	17	31	15
Columbus	66	11.8	14.6	6	12	56
Dallas	37	9.2	9.5	6	10	------
White	27	------	9.8	5	10	------
Colored	10	(6)	7.7	1	0	------
Dayton	37	10.7	13.8	4	5	66
Denver	78	11.0	11.3	8	7	------
Des Moines	26	9.1	11.8	3	4	50
Detroit	232	9.1	9.7	36	42	57
Duluth	18	8.2	7.8	0	3	0
El Paso	35	16.0	11.5	10	5	------
Erie	32	------	------	3	6	59
Fall River	25	9.8	12.3	6	9	106
Flint	23	8.4	9.2	7	10	114
Fort Worth	35	11.1	7.5	4	4	------
White	24	------	6.7	3	4	------
Colored	11	(6)	13.7	1	0	------
Grand Rapids	21	6.9	10.4	6	4	88
Houston	65	------	------	8	3	------
White	39	------	------	6	3	------
Colored	26	(6)	------	2	0	------
Indianapolis	87	12.1	15.9	7	15	55
White	74	------	15.3	7	15	63
Colored	13	(6)	20.1	0	0	0
Jersey City	47	7.6	9.7	6	4	45
Kansas City, Kans	30	13.4	11.1	3	4	58
White	19	------	9.7	2	1	45
Colored	11	(6)	17.8	1	3	152
Kansas City, Mo	75	10.2	12.8	2	7	------
Knoxville	32	16.4	------	2	------	------
White	26	------	------	2	------	------
Colored	6	(6)	------	0	------	------
Los Angeles	196	------	------	21	29	60
Louisville	55	9.0	12.6	11	11	94
White	43	------	11.3	11	10	107
Colored	12	(6)	20.0	0	1	0
Lowell	22	10.4	14.2	8	8	154
Lynn	17	8.4	7.0	4	1	106
Memphis	66	19.2	19.1	8	8	------
White	34	------	17.4	4	5	------
Colored	32	(6)	22.3	4	3	------
Milwaukee	81	8.0	9.3	7	13	33
Minneapolis	66	7.8	11.8	5	7	28
Nashville [5]	49	18.5	20.2	6	14	------
White	19	------	16.5	3	11	------
Colored	30	(6)	29.4	3	3	------
New Bedford	25	10.9	7.0	0	1	0
New Haven	35	9.9	10.9	2	5	28

(Footnotes at end of table)

Deaths from all causes in certain large cities of the United States during the week ended September 3, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, September 8, 1927, issued by the Bureau of the Census, Department of Commerce)—Contd.

City	Week ended Sept. 3, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Sept. 3, 1927
	Total deaths	Death rate		Week ended Sept 3, 1927	Corresponding week 1926	
New Orleans	133	16.4	14.4	11	20	
White	72		11 3	6	12	
Colored	61	(6)	23 4	5	8	
New York	1,104	9.6	9 6	137	165	57
Bronx Borough	116	6 5	8 2	13	9	41
Brooklyn Borough	389	8.9	8.5	59	67	61
Manhattan Borough	457	13.1	12.5	49	71	58
Queens Borough	104	6.7	6.2	13	14	56
Richmond Borough	38	13.5	16 4	3	4	56
Newark, N. J	84	9 4	6 9	14	11	69
Oakland	38	7.4	8.8	2	4	23
Oklahoma City	27			6	3	
Omaha	32	7.6	11 6	4	6	44
Paterson	19	6 9	13.5	2	3	35
Philadelphia	413	10 6	11 6	47	77	63
Pittsburgh	173	14 0	10 8	30	23	105
Portland, Oreg	53			5	1	53
Providence	35	6 5	9 5	3	7	25
Richmond	44	11.9	15.2	3	11	40
White	22		12.8	2	7	40
Colored	22	(6)	20.9	1	4	38
Rochester	76	12.2	9.7	11	11	93
St Louis	187	11.6	12.8	22	19	
St Paul	53	11 1	12 0	2	6	18
Salt Lake City [5]	36	13 8	10 6	1	1	15
San Antonio	60	14.8	9 2	8	10	
San Diego	32	14.5	11.9	3	3	64
San Francisco	127	11 5	13 6	4	8	25
Schenectady	16	9 0	9.0	0	2	0
Seattle	50			3	3	31
Somerville	14	7.2	7.3	2	0	72
Spokane	21	10.0	7.7	3	2	75
Springfield, Mass	17	6.0	8.6	5	2	77
Syracuse	52	13.8	12.4	0	5	0
Tacoma	23	11.2	14 8	1	2	24
Toledo	75	12 9	11 5	7	10	67
Trenton	18	6 9	8 6	0	3	0
Washington, D. C	122	11 8	9.8	7	14	40
White	70		7.8	4	9	34
Colored	52	(6)	15 6	3	5	55
Waterbury	11			0	3	0
Wilmington, Del	17	7 0	9.7	1	4	25
Worcester	49	13 1	11.1	3	10	36
Yonkers	18	7 9	9.9	1	4	23
Youngstown	31	9.6	9.2	1	8	14

[1] Annual rate per 1,000 population

[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.

[3] Data for 66 cities.

[4] Data for 62 cities.

[5] Deaths for week ended Friday, Sept 2, 1927.

[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15, Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended September 10, 1927

DIPHTHERIA	Cases
Alabama	76
Arkansas	11
California	88
Colorado	11
Connecticut	22
Delaware	3
Florida	19
Georgia	41
Illinois	79
Indiana	22
Iowa [1]	11
Kansas	14
Louisiana	30
Maine	1
Maryland [1]	27
Massachusetts	71
Michigan	48
Minnesota	30
Mississippi	23
Missouri	27
Montana	2
Nebraska	8
New Jersey	70
New Mexico	3
New York [2]	43
North Carolina	80
Oklahoma [3]	48
Oregon	3
Pennsylvania	106
Rhode Island	8
South Carolina	29
South Dakota	2
Tennessee	47
Texas	42
Utah [1]	1
Vermont	3
Washington	10
West Virginia	14
Wisconsin	32

INFLUENZA	Cases
Alabama	10
Arkansas	8
California	5
Georgia	19
Illinois	16
Indiana	25
Louisiana	6
Maryland [1]	4
Massachusetts	3
Missouri	1
New Jersey	1
Oklahoma [3]	17
Oregon	6
South Carolina	259
Tennessee	20
Texas	26
Utah [1]	2
West Virginia	5
Wisconsin	40

MEASLES	
Alabama	39
Arkansas	11
California	23
Colorado	1
Connecticut	8
Florida	4
Georgia	13
Illinois	13
Indiana	7
Iowa [1]	2
Kansas	7
Louisiana	3
Maine	3
Maryland [1]	7
Massachusetts	40
Michigan	8
Minnesota	3
Missouri	4
Montana	1

[1] Week ended Friday. [2] Exclusive of New York City. [3] Exclusive of Oklahoma City and Tulsa.

MEASLES—continued	Cases
New Jersey	5
New Mexico	7
New York [2]	34
North Carolina	90
Oklahoma [3]	15
Oregon	16
Pennsylvania	56
South Carolina	30
South Dakota	3
Tennessee	35
Texas	6
Utah [1]	2
Vermont	16
Washington	8
West Virginia	15
Wisconsin	71
Wyoming	2

MENINGOCOCCUS MENINGITIS	
California	3
Illinois	6
Kansas	1
Massachusetts	2
Michigan	4
New Jersey	2
New York [2]	1
North Carolina	1
Pennsylvania	3
Tennessee	2
Washington	1
Wisconsin	2

POLIOMYELITIS	
Arizona	2
California	49
Colorado	2
Connecticut	11
Florida	4
Illinois	35
Indiana	6
Iowa [1]	7
Kansas	9
Maine	6
Massachusetts	92
Michigan	19
Minnesota	2
Mississippi	1
Missouri	16
Nebraska	5
New Jersey	34
New Mexico	3
New York [2]	29
Ohio [4]	105
Oklahoma [3]	10
Oregon	11
Pennsylvania	41
Rhode Island	3
South Carolina	6
South Dakota	2
Tennessee	5
Texas	20
Vermont	1
Washington	7
West Virginia	17
Wisconsin	10

SCARLET FEVER	Cases
Alabama	44
Arkansas	9
California	47
Colorado	12
Connecticut	13
Delaware	1
Florida	3
Georgia	14
Idaho	2
Illinois	86
Indiana	52
Iowa [1]	8
Kansas	51
Louisiana	2
Maine	16
Maryland [1]	10
Massachusetts	56
Michigan	83
Minnesota	46
Mississippi	16
Missouri	25
Montana	12
Nebraska	20
New Jersey	22
New Mexico	7
New York [2]	55
North Carolina	59
Oklahoma [3]	23
Oregon	4
Pennsylvania	130
Rhode Island	9
South Carolina	15
South Dakota	8
Tennessee	34
Texas	15
Vermont	9
Washington	8
West Virginia	21
Wisconsin	47
Wyoming	2

SMALLPOX	
Alabama	4
Arkansas	1
California	5
Colorado	3
Florida	1
Idaho	1
Illinois	12
Indiana	30
Iowa [1]	16
Kansas	1
Michigan	5
Minnesota	1
Mississippi	1
Missouri	7
Montana	1
Nebraska	2
New Jersey	1
North Carolina	7
Oklahoma [3]	9
Oregon	6
South Carolina	6
Tennessee	2
Washington	4
Wisconsin	3

[1] Week ended Friday [2] Exclusive of New York City [3] Exclusive of Oklahoma City and Tulsa.
[4] Includes 20 of the cases reported for the week ended September 6.

TYPHOID FEVER	Cases
Alabama	80
Arizona	7
Arkansas	56
California	10
Colorado	7
Connecticut	6
Delaware	3
Florida	5
Georgia	69
Illinois	63
Indiana	35
Iowa [1]	3
Kansas	24
Louisiana	23
Maine	6
Maryland [1]	20
Massachusetts	16
Michigan	20
Minnesota	5
Mississippi	16
Missouri	32
Montana	8
Nebraska	4
New Jersey	18
New Mexico	17
New York [2]	32
North Carolina	29
Oklahoma [3]	110
Oregon	4
Pennsylvania	51
Rhode Island	9
South Carolina	94
South Dakota	5
Tennessee	111
Texas	54
Washington	6
West Virginia	32
Wisconsin	7
Wyoming	2

[1] Week ended Friday. [2] Exclusive of New York City. [3] Exclusive of Oklahoma City and Tulsa.

Reports for Week Ended September 3, 1927

DIPHTHERIA	Cases
District of Columbia	11
North Dakota	2
INFLUENZA	
District of Columbia	1
MEASLES	
North Dakota	5
POLIOMYELITIS	
North Dakota	2
SCARLET FEVER	
District of Columbia	13
North Dakota	40
TYPHOID FEVER	
District of Columbia	5
North Dakota	4

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
July, 1927										
California	19	287	30	9	581	1	215	248	43	80
District of Columbia	1	46	1		14	1	0	33	14	11
Hawaii Territory	5	22	3		40		0	3	0	9
Idaho	1	4	1		72		0	20	38	6
August, 1927										
Connecticut	1	82	5	6	42		52	38	0	13
District of Columbia	0	39	2		1	1	3	17	3	18
Nebraska	1	15			66		6	53	15	22

July, 1927

	Cases
Chicken pox:	
California	367
District of Columbia	17
Hawaii Territory	3
Idaho	11
Conjunctivitis (follicular):	
Hawaii Territory	3
Dysentery:	
California	13
German measles:	
California	51
Leprosy:	
California	4
Hawaii Territory	3
Lethargic encephalitis:	
California	4
Malta fever:	
California	1
Mumps:	
California	152
Idaho	13
Paratyphoid fever:	
California	2
Plague:	
California	1
Rabies in animals:	
California	14
Rocky Mountain spotted or tick fever:	
Idaho	1
Septic sore throat:	
Idaho	1
Tetanus:	
California	8
Hawaii Territory	3
Trachoma:	
California	5
Hawaii Territory	1
Whooping cough:	
California	602
District of Columbia	48
Hawaii Territory	21
Idaho	17

August, 1927

	Cases
Chicken pox:	
Connecticut	50
District of Columbia	8
Nebraska	12
German measles:	
Connecticut	2
Lethargic encephalitis:	
Connecticut	3
Mumps:	
Connecticut	24
Nebraska	27
Paratyphoid fever:	
Connecticut	3
Rabies in animals:	
Connecticut	2
Septic sore throat:	
Connecticut	5
Nebraska	7
Tetanus:	
Connecticut	3
Whooping cough:	
Connecticut	191
District of Columbia	20
Nebraska	38

PLAGUE PREVENTION WORK IN CALIFORNIA

Los Angeles.—The rodent division of the Los Angeles Board of Health reports 4,470 rodents collected from July 1 to August 20, 1927. None were found plague infected during this period.

San Francisco.—The weekly reports of plague suppressive measures in California during the period May 29 to August 20, 1927, show a total of 9,552 rodents received and 8,232 examined during the 12 weeks. The last case of human plague was reported as occurring on July 17, 1927, in Contra Costa County.

The State board of health reports two ground squirrels in Contra Costa County as being plague infected on August 10, 1927.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 98 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,460,000. The estimated population of the 92 cities reporting deaths is more than 29,780,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended August 27, 1927, and August 28, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
41 States	1,042	834	
98 cities	470	374	489
Measles.			
40 States	692	939	
98 cities	150	172	
Poliomyelitis.			
41 States	333	128	
Scarlet fever.			
41 States	885	753	
98 cities	316	314	251
Smallpox:			
41 States	115	163	
98 cities	31	23	21
Typhoid fever.			
41 States	1,228	1,487	
98 cities	186	235	209
Deaths reported			
Influenza and pneumonia:			
92 cities	296	280	
Smallpox:			
92 cities	0	0	

City reports for week ended August 27, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during non-epidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine.									
Portland	75,333	0	0	1	0	0	0	0	0
New Hampshire.									
Concord	22,546	0	0	0	0	0	0	0	0
Manchester	83,097	0	1	0	0	0	0	0	2
Vermont:									
Barre	10,008	0	0	0	0	0	0	0	0
Burlington	24,089	0	0	1	0	0	0	0	1
Massachusetts:									
Boston	779,620	5	27	21	0	0	21	1	11
Fall River	128,993	0	1	0	0	1	0	0	1
Springfield	142,065	0	1	1	0	0	0	3	2
Worcester	190,757	1	3	0	0	0	0	0	1
Rhode Island.									
Pawtucket	69,760	0	0	1	0	0	0	0	1
Providence	267,918	0	3	4	0	0	0	0	1
Connecticut.									
Bridgeport	(1)	0	4	5	0	0	0	0	1
Hartford	160,197	1	3	2	0	0	1	0	3
New Haven	178,927	0	2	2	0	0	3	0	1
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	3	11	15		0	10	0	1
New York	5,873,356	15	87	83	3	2	10	8	66
Rochester	316,786	0	4	4		0	0	1	2
Syracuse	182,003	2	3	0		0	1	0	2

[1] No estimate made.

City reports for week ended August 27, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
MIDDLE ATLANTIC—con.									
New Jersey									
Camden	128,642	0	1	7	0	0	0	0	2
Newark	452,513	4	6	7	1	0	0	5	2
Trenton	132,020	0	2	0	0	0	0	0	2
Pennsylvania:									
Philadelphia	1,979,364	7	32	24		2	3	7	21
Pittsburgh	631,563	6	11	19		1	24	1	14
Reading	112,707	1	1	0		0	0	0	0
EAST NORTH CENTRAL									
Ohio									
Cincinnati	409,333	0	5	2	0	0	3	1	5
Cleveland	936,485	5	19	34	0	1	3	15	8
Columbus	279,836	1	2	3	0	0	0	0	3
Toledo	287,380	2	5	3	0	0	0	2	4
Indiana.									
Fort Wayne	97,846	0	1	3	0	0	0	0	1
Indianapolis	358,819	0	3	1	0	0	1	3	3
South Bend	80,091	0	1	0	0	0	2	0	0
Terre Haute	71,071	0	1	0	0	0	0	0	1
Illinois									
Chicago	2,995,239	14	16	46	3	2	5	10	18
Springfield	63,923	0	0	2	0	0	0	0	0
Michigan									
Detroit	1,245,824	3	32	23	0	1	2	2	6
Flint	130,316	0	4	2	0	0	1	0	3
Grand Rapids	153,698	3	2	1	0	0	2	2	1
Wisconsin									
Kenosha	50,891	0	1	0	0	0	0	0	0
Milwaukee	509,192	6	8	5	0	0	1	3	2
Racine	67,707	1	0	0	0	0	0	0	0
Superior	39,671	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota									
Duluth	110,502	1	0	1	0	0	1	0	3
Minneapolis	425,435	4	14	5	0	1	1	1	1
St. Paul	246,001	0	11	3	0	0	0	1	4
Iowa									
Davenport	52,469	0	0	3	0		2	0	
Sioux City	76,411	0	0	0	0		0	0	
Waterloo	36,771	0	0	0	0		0	0	
Missouri									
Kansas City	367,481	0	3	0	0	0	1	3	4
St. Joseph	78,342	0	0	0	0	0	0	0	1
St. Louis	821,543	2	19	15	0	0	2	5	
North Dakota									
Fargo	26,403	0	0	0	0	0	0	0	1
Grand Forks	14,811	0	0	0	0		0	0	
South Dakota									
Aberdeen	15,036	0	0	0	0		0	0	
Sioux Falls	30,127	0	0	0	0		1	0	
Nebraska									
Lincoln	60,941	0	0	0	0	0	0	2	0
Omaha	211,768	1	6	3	0	0	0	1	1
Kansas									
Topeka	55,411	0	0	0	0	0	0	0	0
Wichita	88,367	0	0	0	0	0	0	0	0
SOUTH ATLANTIC									
Delaware.									
Wilmington	122,049	1	1	2	0	0	0	0	0
Maryland.									
Baltimore	796,296	2	12	21	4	1	1	0	5
Cumberland	33,741	0	1	0	0	0	0	0	0
Frederick	12,035	0	1	0	0	0	0	0	0
District of Columbia.									
Washington	497,906	1	4	2	1	1	0	0	4
Virginia.									
Lynchburg	30,395	0	0	0	0	0	2	0	0
Norfolk	(1)	0	0	1	0	0	0	0	2
Richmond	186,403	0	7	3	0	0	0	0	1
Roanoke	58,208	0	2	2	0	0	1	0	0
West Virginia									
Charleston	49,019	0	0	1	0	0	0	0	2
Wheeling	56,208	0	1	0	0	0	0	0	0

City reports for week ended August 27, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria: Cases, estimated expectancy	Diphtheria: Cases reported	Influenza: Cases reported	Influenza: Deaths reported	Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
SOUTH ATLANTIC—con.									
North Carolina:									
Raleigh	30,371	0	0	1	0	0	1	0	0
Wilmington	37,061	0	1	0	0	0	2	0	1
Winston-Salem	69,031	0	1	1	0	0	3	0	0
South Carolina:									
Charleston	73,125	0	0	0	10	0	0	0	2
Columbia	41,225	0	0	2	0		5	0	
Greenville	27,311		0						
Georgia:									
Atlanta	(1)	1	2	7	7	3	1	1	2
Brunswick	16,809	0	0	0	0	0	0	3	0
Savannah	93,134	0	1	2	1	1	0	1	1
Florida:									
Miami	69,754	0		0	0	0	3	3	1
St. Petersburg	26,847		0			0			0
Tampa	94,743	0	1	0	0	0	1	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	0	0	0	0	0	0	0
Lexington	46,895	0		0	0	0	0	0	2
Louisville	305,935	0	3	0	0	0	2	2	3
Tennessee:									
Memphis	174,533	0	3	1	0	1	0	0	2
Nashville	136,220	0	0	3	0	0	0	0	5
Alabama:									
Birmingham	205,670	0	3	4	2	1	3	1	3
Mobile	65,955	0	1	0	0	1	0	5	0
Montgomery	46,481	0	1	4	0	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	0	0	0	0		0	0	
Little Rock	74,216	0	0	1	0	0	2	0	1
Louisiana:									
New Orleans	414,493	0	6	7	5	2	0	0	5
Shreveport	57,857	0	0	0	0	2	0	2	1
Oklahoma:									
Oklahoma City	(1)	0	1	0	3	0	0	0	0
Tulsa	124,478	0		0	0		0	0	
Texas:									
Dallas	194,450	0	3	6	0	0	2	0	1
Galveston	48,375	0	0	1	0	0	0	0	2
Houston	164,954	0	2	1	0	1	0	1	1
San Antonio	198,069	0	1	7	0	0	0	0	4
MOUNTAIN									
Montana:									
Billings	17,971	0	0	0	0	0	0	0	0
Great Falls	29,883	2	1	2	0	0	1	0	0
Helena	12,037		0						
Missoula	12,668	0	0	0	0	0	1	0	0
Idaho:									
Boise	23,042	0	0	0	0	0	0	0	0
Colorado:									
Denver	280,911	3	9	9		1	0	4	3
Pueblo	43,787	0	2	0	0	0	0	0	0
New Mexico:									
Albuquerque	21,000	0	0	0	0	0	0	0	0
Utah:									
Salt Lake City	130,948	5	2	2	0	0	1	2	1
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	(1)	0	3	5	0		4	1	
Spokane	108,897	5	2	1	0		0	0	
Tacoma	104,455	2	1	2	0	0	1	0	0
Oregon:									
Portland	282,383	0	4	0	0	0	2	1	1
California:									
Los Angeles	(1)	1	22	23	3	0	3	2	14
Sacramento	72,260	1	2	0	0	1	1	0	0
San Francisco	557,530	8	13	5	1	1	11	5	4

[1] No estimate made.

City reports for week ended August 27, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
NEW ENGLAND											
Maine.											
Portland	0	0	0	0	0	0	1	0	0	4	14
New Hampshire.											
Concord	0	0	0	0	0	0	0	0	0	0	7
Manchester	0	1	0	0	0	0	0	0	0	0	16
Vermont.											
Barre	0	1	0	0	0	0	0	0	0	0	1
Burlington	1	0	0	0	0	0	0	0	0	0	3
Massachusetts											
Boston	14	21	0	0	0	9	4	10	1	21	166
Fall River	1	0	0	0	0	3	1	0	0	0	17
Springfield	1	2	0	0	0	1	0	0	0	0	22
Worcester	2	1	0	0	0	2	1	1	0	8	56
Rhode Island											
Pawtucket	0	2	0	0	0	0	1	0	0	0	10
Providence	2	5	0	0	0	0	1	3	0	3	50
Connecticut											
Bridgeport	2	1	0	0	0	0	1	0	0	0	21
Hartford	1	2	0	0	0	2	1	0	0	12	45
New Haven	2	0	0	0	0	2	3	0	0	8	22
MIDDLE ATLANTIC											
New York											
Buffalo	4	6	0	0	0	8	2	1	0	20	108
New York	24	34	0	0	0	[1] 73	42	27	0	118	1,008
Rochester	2	0	0	0	0	2	1	2	0	8	50
Syracuse	3	5	0	0	0	0	0	0	0	0	33
New Jersey											
Camden	0	0	0	0	0	3	1	1	0	2	29
Newark	3	1	0	0	0	6	2	0	0	45	89
Trenton	1	0	0	0	0	4	1	0	0	0	31
Pennsylvania											
Philadelphia	17	19	0	0	0	24	13	7	4	25	359
Pittsburgh	9	8	0	0	0	10	3	5	0	28	134
Reading	0	0	0	0	0	0	1	0	0	4	16
EAST NORTH CENTRAL											
Ohio											
Cincinnati	3	0	0	0	0	7	2	2	1	0	116
Cleveland	10	9	0	0	0	13	5	1	0	25	164
Columbus	2	4	0	0	0	4	1	0	0	7	70
Toledo	4	2	0	0	0	4	2	3	1	20	48
Indiana											
Fort Wayne	0	0	0	0	0	2	1	2	0	2	17
Indianapolis	2	8	0	4	0	4	2	3	0	0	74
South Bend	1	0	1	0	0	0	0	0	0	3	7
Terre Haute	0	0	0	1	0	1	0	1	0	0	13
Illinois:											
Chicago	23	25	0	4	0	48	7	2	1	98	568
Springfield	0	0	0	0	0	1	0	0	0	0	17
Michigan											
Detroit	23	26	1	0	0	22	5	4	2	93	193
Flint	3	15	0	0	0	1	1	0	0	6	24
Grand Rapids	2	2	1	0	0	1	1	0	0	3	21
Wisconsin:											
Kenosha	1	0	0	0	0	0	0	0	0	1	9
Milwaukee	6	2	1	0	0	8	0	2	1	38	98
Racine	1	1	0	0	0	0	0	0	0	17	9
Superior	2	0	1	0	0	0	0	0	0	0	8
WEST NORTH CENTRAL											
Minnesota:											
Duluth	4	0	0	0	0	1	0	0	0	3	16
Minneapolis	12	6	1	0	0	4	1	0	0	0	73
St. Paul	5	6	1	0	0	2	1	0	0	6	41

[1] Pulmonary tuberculosis only.

City reports for week ended August 27, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
WEST NORTH CENTRAL—contd.											
Iowa:											
Davenport	0	0	0	0			0	0		0	
Sioux City	0	0	1	0			0	0		2	
Waterloo	0	0	0	0			0	0		2	
Missouri:											
Kansas City	2	2	0	1	0	3	3	0	0	2	83
St. Joseph	1	0	0	0	0	1	0	1	1	0	23
St. Louis	6	5	0	0	0	11	8	6	0	16	124
North Dakota:											
Fargo	0	1	0	0	0	0	0	0	0	0	5
Grand Forks	0	0	0	0			0	0		0	
South Dakota:											
Aberdeen	1	0	0	0			0	0		5	
Sioux Falls	0	0	0	0			0	0		0	
Nebraska:											
Lincoln	0	1	0	0	0	0	1	0	0	0	13
Omaha	1	4	0	1	0	0	0	3	0	4	47
Kansas:											
Topeka	1	1	0	0	0	0	1	0	0	15	25
Wichita	1	6	0	0	0	0	2	0	0	7	12
SOUTH ATLANTIC											
Delaware:											
Wilmington	0	2	0	0	0	0	0	1	0	0	24
Maryland:											
Baltimore	6	9	0	0	0	12	11	10	1	29	180
Cumberland	1	0	0	0	0	1	0	0	0	0	7
Frederick	0	0	0	0	0	0	0	0	0	0	2
District of Columbia:											
Washington	3	3	0	0	0	14	5	5	0	5	93
Virginia:											
Lynchburg	0	0	0	0	0	0	1	2	0	0	13
Norfolk	0	2	0	0	0	1	2	1	0	0	
Richmond	3	2	0	0	0	3	2	0	0	0	32
Roanoke	1	0	0	0	0	2	1	0	0	0	17
West Virginia:											
Charleston	0	3	0	0	0	1	2	1	0	0	20
Wheeling	1	0	0	0	0	0	1	0	0	0	16
North Carolina:											
Raleigh	0	1	0	0	0	1	1	0	0	0	7
Wilmington	1	0	0	0	0	0	0	0	0	3	6
Winston-Salem	0	1	1	0	0	0	2	2	0	4	18
South Carolina:											
Charleston	0	1	0	0	0	6	3	2	0	0	24
Columbia	0	0	0	0			0	0		0	13
Greenville	0		0				0				
Georgia:											
Atlanta	3	8	0	0	0	0	4	5	0	5	62
Brunswick	0	0	0	0	0	0	0	1	0	0	8
Savannah	0	1	0	0	0	2	1	1	0	1	27
Florida:											
Miami		0		0	0	2		0	0	3	26
St. Petersburg	0		0		0	0	0		0		12
Tampa	0	1	1	0	0	0	1	0	0	0	19
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0	0	0	0	0	0	0	0	0	0	20
Lexington		0		0	0	3		0	1	2	14
Louisville	1	8	1	1	0	5	5	4	0	9	69
Tennessee:											
Memphis	1	4	0	4	0	3	6	4	1	7	63
Nashville	2	0	0	0	0	4	7	9	1	0	38
Alabama:											
Birmingham	3	3	0	0	0	4	5	22	1	4	65
Mobile	0	2	0	0	0	1	1	0	0	0	18
Montgomery	0	0	0	0	0	0	0	1	0	0	

City reports for week ended August 27, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	0	0	0			1	0		2	
Little Rock	0	0	0	0	0	2	2	0	0	0	
Louisiana:											
New Orleans	1	2	0	0	0	11	5	5	0	4	125
Shreveport	0	0	0	0	0	1	2	2	2	0	30
Oklahoma:											
Oklahoma City	2	2	0	0	0	0	2	4	0	1	25
Tulsa		0		0				0		2	
Texas:											
Dallas	2	5	0	0	0	3	3	5	0	1	24
Galveston	0	1	0	0	0	0	0	2	0	0	12
Houston	0	3	1	0	0	3	1	2	0	0	53
San Antonio	0	3	0	0	0	9	1	2	1	0	61
MOUNTAIN											
Montana:											
Billings	0	0	1	0	0	0	1	0	0	1	4
Great Falls	0	0	0	0	0	0	0	0	0	0	4
Helena	0		0				0				
Missoula	0	0	0	0	0	0	0	0	0	0	8
Idaho:											
Boise	0	0	0	0	0	0	0	0	0	1	7
Colorado:											
Denver	3	5	1	0	0	3	3	0	0	9	77
Pueblo	0	0	0	0	0	1	0	0	0	0	10
New Mexico:											
Albuquerque	1	0	0	0	0	10	0	3	0	0	12
Utah:											
Salt Lake City	1	2	0	3	0	2	1	4	0	11	25
Nevada:											
Reno	0	0	0	0	0	1	0	1	0	0	10
PACIFIC											
Washington:											
Seattle	3	0	1	0			1	3		9	
Spokane	3	1	1	6			0	0		0	
Tacoma	2	1	1	4	0	1	0	1	0	5	18
Oregon:											
Portland	3	1	4	4	0	3	1	0	0	0	
California:											
Los Angeles	6	8	2	0	0	15	4	0	0	4	199
Sacramento	1	0	1	1	0	0	2	3	0	0	19
San Francisco	5	4	1	1	0	9	2	1	0	12	134

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Maine:									
Portland	0	0	0	0	0	0	0	4	0
Massachusetts:									
Boston	2	0	1	0	0	0	2	18	2
Fall River	0	0	0	0	0	0	0	1	0
Worcester	0	0	0	0	0	1	1	2	1
Rhode Island:									
Providence	0	0	1	0	0	0	0	2	0
Connecticut:									
Bridgeport	0	0	0	0	0	0	1	1	0
New Haven	0	0	0	0	0	0	0	0	1

City reports for week ended August 27, 1927—**Continued**

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
MIDDLE ATLANTIC									
New York:									
New York	5	1	6	3	0	0	8	35	6
Rochester	0	0	0	1	0	0	0	2	2
New Jersey:									
Newark	0	0	1	0	0	0	0	4	1
Pennsylvania:									
Philadelphia	0	0	0	0	1	0	1	1	1
Pittsburgh	0	1	0	1	0	0	1	11	1
EAST NORTH CENTRAL									
Ohio:[1]									
Cleveland	1	0	1	0	0	0	1	5	0
Columbus	0	0	0	0	0	0	0	3	0
Illinois:									
Chicago	0	1	2	2	0	0	4	14	2
Michigan:									
Detroit	0	0	1	1	0	0	1	3	0
Flint	0	0	0	0	0	0	0	1	0
Wisconsin:									
Milwaukee	1	0	0	0	0	0	0	1	0
Superior	0	1	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	0	0	0	0	0	0	0	1	0
Minneapolis	4	1	0	0	0	0	0	0	0
Iowa:									
Waterloo	0	-------	0	-------	0	-------	0	1	-------
Missouri:									
Kansas City	0	0	1	2	0	0	1	1	0
St. Louis	1	0	0	0	0	0	1	1	0
Nebraska:									
Lincoln	0	0	0	0	0	0	0	1	0
Omaha	0	0	0	0	0	0	1	1	0
Kansas:									
Wichita	0	0	0	0	0	0	0	1	0
SOUTH ATLANTIC									
Maryland:									
Baltimore	1	0	0	0	0	0	2	0	0
District of Columbia:									
Washington	0	0	0	0	0	0	1	1	0
West Virginia:									
Wheeling	0	0	0	0	0	0	0	3	1
South Carolina:									
Charleston[2]	0	0	0	0	3	0	0	0	0
Georgia:[3]									
Atlanta	0	0	0	0	0	1	1	0	0
Florida:									
St. Petersburg	0	1	0	0	0	0	0	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Lexington	0	0	0	0	0	0	-------	1	0
Tennessee:									
Memphis	0	0	0	0	1	0	0	0	0
Nashville	0	0	0	0	0	0	0	2	0
Alabama:[3]									
Birmingham	2	0	0	0	1	0	0	0	0

[1] Rabies (human): 1 case and 1 death at Toledo, Ohio.
[2] Dengue: 2 cases at Charleston, S. C.
[3] Typhus fever: 1 case at Savannah, Ga., and 1 case at Mobile, Ala.

City reports for week ended August 27, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	0		0		1		0	0	
Little Rock	0	0	0	0	0	2	0	0	0
Louisiana:									
New Orleans	0	0	1	0	4	0	0	2	0
Shreveport	0	0	0	0	0	1	0	0	0
Oklahoma:									
Oklahoma City	0	0	0	1	0	0	0	1	0
Texas:									
Houston	0	0	0	0	0	0	0	3	2
San Antonio	1	1	0	0	0	0	0	2	1
MOUNTAIN									
Colorado:									
Denver	0	0	0	1	0	0	0	2	0
New Mexico:									
Albuquerque	0	0	0	0	0	0	0	2	2
PACIFIC									
Washington:									
Seattle	1		0		0		0	1	
Tacoma	0	0	0	0	0	0	0	0	1
Oregon:									
Portland	2	1	0	0	0	0	0	1	0
California:									
Los Angeles	0	0	0	0	1	0	1	2	0
Sacramento	0	0	0	0	0	0	0	2	2
San Francisco	0	0	0	0	0	0	0	9	2

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended August 27, 1927, compared with those for a like period ended August 28, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table following.

Summary of weekly reports from cities, July 24 to August 27, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	July 31, 1926	July 30, 1927	Aug 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug 13, 1927	Aug 21, 1926	Aug 20, 1927	Aug. 28, 1926	Aug. 27, 1927
101 cities	80	[2] 91	78	78	69	90	68	80	65	[3] 80
New England	40	91	40	63	31	70	47	111	50	86
Middle Atlantic	103	104	88	92	62	97	59	94	56	[4] 78
East North Central	83	102	104	80	101	94	87	85	76	81
West North Central	85	56	52	42	56	67	83	44	81	54
South Atlantic	20	89	43	65	48	82	60	62	61	[5] 88
East South Central	21	31	10	31	57	25	21	51	57	61
West South Central	39	71	39	92	26	92	64	75	34	96
Mountain	91	117	118	135	73	180	146	54	73	[6] 119
Pacific	118	[2] 121	102	76	104	107	62	60	91	94

MEASLES CASE RATES

	July 31, 1926	July 30, 1927	Aug 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug 13, 1927	Aug 21, 1926	Aug 20, 1927	Aug. 28, 1926	Aug. 27, 1927
101 cities	108	[2] 58	70	48	59	28	44	32	30	[3] 26
New England	83	160	83	93	68	63	52	84	38	58
Middle Atlantic	63	45	42	43	33	28	27	35	15	[4] 25
East North Central	191	47	113	29	84	19	72	13	43	13
West North Central	93	40	58	34	67	22	28	22	20	16
South Atlantic	114	69	47	38	80	14	35	27	15	[5] 31
East South Central	93	46	41	10	31	15	36	5	36	25
West South Central	9	59	9	55	4	21	9	42	4	17
Mountain	128	63	137	45	64	36	18	18	27	[6] 28
Pacific	121	[2] 65	121	144	91	60	78	71	94	52

SCARLET FEVER CASE RATES

	July 31, 1926	July 30, 1927	Aug 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug 13, 1927	Aug 21, 1926	Aug 20, 1927	Aug. 28, 1926	Aug. 27, 1927
101 cities	73	[2] 63	61	51	51	58	48	50	55	[3] 54
New England	118	107	104	51	68	93	73	51	54	81
Middle Atlantic	52	39	38	36	30	39	29	31	32	[4] 37
East North Central	84	87	79	75	55	73	46	78	55	61
West North Central	143	79	101	62	119	75	119	64	133	62
South Atlantic	34	40	39	27	30	33	39	42	58	[5] 62
East South Central	62	41	31	51	47	36	36	20	62	87
West South Central	39	25	13	25	21	59	17	50	26	59
Mountain	36	153	64	126	36	117	36	81	64	[6] 64
Pacific	86	[2] 65	83	60	86	63	78	42	75	37

SMALLPOX CASE RATES

	July 31, 1926	July 30, 1927	Aug 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug 13, 1927	Aug 21, 1926	Aug 20, 1927	Aug. 28, 1926	Aug. 27, 1927
101 cities	5	[2] 5	8	6	7	4	2	5	4	[3] 5
New England	0	0	0	0	0	0	0	0	0	0
Middle Atlantic	0	0	1	0	0	0	1	0	0	[4] 0
East North Central	6	9	9	9	1	5	2	7	7	6
West North Central	4	6	14	0	4	4	4	10	0	4
South Atlantic	2	4	11	9	11	5	6	4	9	[5] 0
East South Central	21	10	16	5	26	0	5	25	0	25
West South Central	4	13	13	17	21	0	0	4	9	0
Mountain	9	27	9	18	73	9	0	18	0	[6] 28
Pacific	32	[2] 10	24	21	32	24	5	13	13	31

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively

[2] Seattle, Wash., and Spokane, Wash., not included.

[3] Newark, N. J., Greenville, S. C., and Helena, Mont., not included

[4] Newark, N. J., not included.

[5] Greenville, S. C., not included.

[6] Helena, Mont., not included.

Summary of weekly reports from cities, July 24 to August 27, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	July 31, 1926	July 30, 1927	Aug. 7, 1926	Aug. 6, 1927	Aug 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug. 20, 1927	Aug. 28, 1926	Aug. 27, 1927
101 cities	30	[2] 21	28	25	35	25	41	37	40	[3] 32
New England	14	9	12	7	17	30	17	30	19	33
Middle Atlantic	23	13	19	13	24	15	34	20	39	[4] 22
East North Central	10	11	12	9	20	14	17	19	20	11
West North Central	22	16	18	26	24	22	48	38	42	20
South Atlantic	54	36	65	58	99	45	93	82	56	[5] 57
East South Central	243	117	181	183	140	97	186	219	233	204
West South Central	47	55	43	50	47	88	43	80	39	75
Mountain	36	72	27	45	73	36	73	27	18	[6] 46
Pacific	11	[2] 24	29	13	29	10	24	31	38	21

INFLUENZA DEATH RATES

	July 31, 1926	July 30, 1927	Aug. 7, 1926	Aug. 6, 1927	Aug 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug. 20, 1927	Aug. 28, 1926	Aug. 27, 1927
95 cities	2	3	2	2	1	3	3	4	3	[3] 5
New England	0	2	0	0	0	2	0	2	0	2
Middle Atlantic	1	4	2	1	1	2	1	2	3	[4] 3
East North Central	1	1	1	0	0	2	3	2	3	3
West North Central	0	0	0	2	2	6	2	0	8	2
South Atlantic	2	2	4	6	0	4	2	6	2	[5] 11
East South Central	5	10	0	5	10	5	0	10	0	15
West South Central	22	9	4	4	13	13	26	30	4	22
Mountain	0	0	9	9	0	0	0	0	18	[6] 9
Pacific	4	3	11	3	0	3	7	0	0	7

PNEUMONIA DEATH RATES

	July 31, 1926	July 30, 1927	Aug. 7, 1926	Aug. 6, 1927	Aug 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug. 20, 1927	Aug. 28, 1926	Aug. 27, 1927
95 cities	48	49	54	47	50	55	54	45	47	[3] 47
New England	33	49	54	33	31	77	40	49	33	51
Middle Atlantic	41	56	56	46	62	57	58	47	56	[4] 57
East North Central	47	42	42	44	35	41	35	35	37	34
West North Central	57	17	51	44	25	44	49	25	42	31
South Atlantic	51	44	68	53	57	72	87	53	59	[5] 37
East South Central	62	46	52	51	52	66	36	66	47	66
West South Central	71	86	97	69	106	56	66	69	71	65
Mountain	55	36	64	54	82	63	82	36	73	[6] 37
Pacific	71	79	57	62	39	55	78	72	21	62

[2] Seattle, Wash., and Spokane, Wash., not included.
[3] Newark, N. J., Greenville, S. C., and Helena, Mont., not included.
[4] Newark, N. J., not included.
[5] Greenville, S. C., not included.
[6] Helena, Mont., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,790,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,100	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

CHOLERA ON VESSEL

Oil tanker "War Mehtar"—En route from Abadan, Persia, to Saffagha, Egypt.—Information has been received of the occurrence of a fatal case of cholera in a member of the crew of the oil tanker *War Mehtar*, en route from Abadan, Persia, to Saffagha, Egypt. The *War Mehtar* left Abadan, where a severe outbreak of cholera was reported, July 20, 1927, arriving at Saffagha, August 4, 1927.

THE FAR EAST

Report for week ended August 20, 1927.—The following report for the week ended August 20, 1927, was transmitted by the eastern bureau of the health section of the secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Iraq Basra	0	0	90	79	0	0
Persia. Mohammerah	0	0	69	60	0	0
British India.						
Bombay	----	4	----	3	5	3
Negapatam	----	0	----	3	2	2
Calcutta	----	0	----	1[illegible]	3	3
Bassein	----	3	----	0	1	1
Rangoon	----	3	----	0	2	0
Straits Settlements Singapore	1	1	0	0	0	0
Dutch East Indies: Banjermasin	0	0	0	0	5	----

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Siam Bangkok	0	0	1	1	0	0
French Indo-China						
Haiphong	0	0	2	2	0	0
Turane	0	0	1	1	0	0
Saigon and Cholon	0	0	0	0	1	0
China.						
Amoy	0	0	6	----	0	0
Shanghai	0	0	----	12	0	0
Macao	0	0	--	1	0	0
Hong Kong	0	0	0	0	1	1
Japan Nagasaki	0	0	0	0	1	0

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Arabia.—Aden, Perim, Bahrein.

Persia.—Bender-Abbas, Bushire, Lingah.

India.—Karachi, Chittagong, Cochin, Tuticorin, Vizagapatam, Moulmein.

Ceylon.—Colombo.

Portuguese India.—Nova Goa.

Federated Malay States.—Port Swettenham.

Straits Settlements.—Penang.

Dutch East Indies.—Batavia, Surabaya, Pontianak, Semarang, Cheribon, Makassar, Balikpapan, Padang, Belawan-Deli, Tarakan, Sabang, Palembang, Samarinda, Menado.

Sarawak.—Kuching.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

Portuguese Timor.—Dilly.

Philippine Islands.—Manila, Iloilo, Jolo, Cebu, Zamboanga.

China.—Tientsin, Tsingtao.

Formosa.—Keelung, Takao.

Chosen.—Chemulpo, Fusan.

Manchuria.—Yingkow, Antung, Harbin, Mukden, Changchun.

Kwantun.—Port Arthur, Dairen.

Japan.—Yokohama, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns, Port Moresby.

New Guinea.—Port Moresby.

New Britain Mandated Territory.—Rabaul and Kokopo.

New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.

Western Samoa.—Apia.

New Caledonia.—Nouméa.

Fiji.—Suva.

Hawaii.—Honolulu.

Society Islands.—Papeete.

AFRICA

Egypt.—Alexandria, Suez, Port Said, El Tor.

Anglo-Egyptian Sudan.—Port Sudan, Suakin.

Eritrea.—Massaua.

French Somaliland.—Djibouti.

British Somaliland.—Berbera.

Italian Somaliland.—Mogadiscio.

Kenya.—Mombasa.

Zanzibar.—Zanzibar.

Tanganyika.—Dar-es-Salaam.

Seychelles.—Victoria.

Portuguese East Africa.—Mozambique, Beira, Lourenço-Marques.

Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.

Reunion.—Saint Denis.

Mauritius.—Port Louis.

Madagascar.—Majunga, Tamatave, Diégo-Suarez.

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from:

Arabia.—Kamaran.

India.—Madras.

Persia.—Abadan, Ahwaz, Minab.

China.—Canton.

Union of Socialist Soviet Republics.—Vladivostok.

Belated information:

Week ended August 13: *Djibouti*, smallpox, 1 case.

ARGENTINA

Influenza—Plague—July 27–August 6, 1927.—During the period under report general epidemic prevalence of influenza was reported in Argentina. The type of the disease was stated to be mild, but with many cases.

During the same period plague was reported present in the interior of Argentina as follows: Province of Cordoba, 2 cases; Province of Entre Rios, 4 cases, 1 case at Crespo and 3 cases at Espinillo; Province of Pampa Central, 2 cases; Territory of Rio Negro, 1 case. It was stated that active measures of rat destruction were being carried out.

CANADA

Communicable diseases—Week ended August 27, 1927.—The Canadian ministry of health reports cases of certain communicable diseases from seven Provinces of Canada for the week ended August 27, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Influenza	2			1				3
Poliomyelitis				1				1
Smallpox				15	4	6	1	26
Typhoid fever	2	1	33	36	4	2	3	81

Communicable diseases—Quebec—Week ended August 27, 1927.—The bureau of health of the Province of Quebec reports cases of certain communicable diseases for the week ended August 27, 1927, as follows:

Disease	Cases	Disease	Cases
Chicken pox	3	Smallpox	1
Diphtheria	19	Tuberculosis	32
Measles	3	Typhoid fever	33
Scarlet fever	21	Whooping cough	45

Poliomyelitis—Alberta—British Columbia.—Poliomyelitis has been reported in Canada as follows: At Edmonton, Alberta, from the month of May to August 25, 1927, 11 cases with 1 death. No association was shown to exist among these cases and no two cases occurred in the same family. In some cases the type of the disease was stated to have been severe and in some very mild. In British Columbia, information dated August 24, 1927, shows 2 cases occurring at Rossland, and at Trail an epidemic of the disease with 13 cases and 2 deaths.

Typhoid fever—Montreal—January 2–September 3, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	May 14, 1927	367	16
Jan. 15, 1927	4	3	May 21, 1927	770	26
Jan 22, 1927	1	2	May 28, 1927	353	38
Jan 29, 1927	3	1	June 4, 1927	239	37
Feb 5, 1927	1	0	June 11, 1927	128	36
Feb 12, 1927	0	0	June 18, 1927	86	
Feb. 19, 1927	1	2	June 25, 1927	75	23
Feb 26, 1927	1	1	July 2, 1927	66	21
Mar 5, 1927	9	1	July 9, 1927	52	10
Mar 12, 1927	203	4	July 16, 1927	39	4
Mar 19, 1927	383	14	July 23, 1927	22	9
Mar 26, 1927	568	22	July 30, 1927	23	10
Apr 2, 1927	649	48	Aug. 6, 1927	16	5
Apr 9, 1927	386	40	Aug 13, 1927	20	5
Apr 16, 1927	175	38	Aug 20, 1927	14	4
Apr. 23, 1927	125	43	Aug. 27, 1927	8	3
Apr 30, 1927	105	23	Sept 3, 1927	27	
May 7, 1927	106	19			

HAWAII

Plague—Kukuihaele—August 12, 1927.—A fatal case of plague was reported, August 12, 1927, at Kukuihaele, island of Hawaii.

JAPAN

Dysentery—Tokyo, city and prefecture—July 17–30, 1927.—During the two weeks ended July 30, 1927, dysentery was reported at Tokyo and in the prefecture as follows: Tokyo City—cases, 170; deaths, 69. Population, 1,995,567. Tokyo prefecture (outside city)—cases, 407; deaths, 164. Population, 2,489,577.

MADAGASCAR

Plague—June 16-30, 1927.—During the two weeks ended June 30, 1927, 20 cases of plague with 19 deaths were reported in the island of Madagascar. The occurrence was distributed according to Provinces as follows: Ambositra—1 case; Moramanga—3 cases: Tananarive—16 cases. The distribution according to type was; Bubonic, cases, 6; pneumonic, 12; septicemic, 2 cases.

UNION OF SOUTH AFRICA

Plague—Orange Free State—July 17-23, 1927.—During the week ended July 23, 1927, three cases of plague, of which two cases were fatal, were reported in the Orange Free State, Union of South Africa. The cases occurred in natives and in one family, and followed the handling and eating of the flea-infested carcass of a meerkat. The occurrence was on a farm in the Edenburg district.

Plague conditions—Cape Province.—Conditions found to exist in the vicinity of the Vaarsche River, about 5 miles north of Van Rhynsdorp, Cape Province, indicate plague infection among the veld rodents. Two gerbille carcasses were reported found, but not in a condition for bacteriological examination.

Smallpox—Typhus fever.—Outbreaks of smallpox were reported in Flagstaff district, Cape Province, and of typhus fever in three districts of the Cape Province and in one district (Vredefort) in the Orange Free State.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the lists of countries included or the figures for the particular countries for which reports are given

Reports Received During Week Ended September 16, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Canton	July 17-23	4	2	
Hong Kong	do	2	2	Imported
Shanghai	July 31-Aug 6		3	In international settlement and French concession.
Swatow	July 24-30	10	1	
India:				
Bombay	July 17-23	13	6	
Calcutta	July 17-30	48	23	
Madras	July 31-Aug. 6	170	92	
Rangoon	July 24-30	1	1	
Japan:				
Yokohama	July 31-Aug 6	1	1	To Aug. 10, 1927 Cases, 2; deaths, 1
Siam				July 17-23, 1927: Cases, 18; deaths, 12 April 1 July 23, 1927 Cases, 600; deaths, 410.
Bangkok	July 17-23	4		District
On vessel		1	1	Oil tanker War Mehtar, en route from Abadan, Persia, July 20, 1927, arrived Aug 4, 1927, at Saffagha, Egypt.

[1] From medical officers of the Public Health Service, American consuls, and other sources

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended September 16, 1927—Continued

PLAGUE

Place	Date	Cases	Deaths	Remarks
Argentina				July 27–Aug. 2, 1927: Cases, 9. In the interior.
Province—				
Cordoba	Aug. 6	2		
Entre Rios—				
Crespo	July 27–Aug. 2	1		
Espinillo	do	3		Mild.
Pampa Central—General Acha.	do	2		
Rio Negro Territory	Aug. 6	1		
Hawaii				
Kukuihaele	Aug 12	1	1	
India				
Bombay	July 17–23	2	2	
Madras Presidency	July 10–16	62	27	
Rangoon	July 24–30	10	9	
Java				
East Java and Madura	June 26–July 2	1		
Batavia	July 17–23	4	4	Province.
Madagascar				June 16–30, 1927. Cases, 20; deaths, 19.
Province—				
Ambositra	June 16–30	1	1	Bubonic
Moramanga	do	3	3	Bubonic, 2, septicemic, 1.
Tananarive	do	16	15	Bubonic, cases, 3; deaths, 2; pneumonic, 12, septicemic, 1.
Siam				Apr 1–July 23, 1927 Cases, 10; deaths, 7.
Union of South Africa:				
Orange Free State—				
Edenburg District	July 17–23	3	2	Natives; on farm.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria:				
Oran	Aug. 1–10	9		
Brazil:				
Rio de Janeiro	July 24–30	2	1	
Canada				
Alberta	Aug. 21–27	1		
Manitoba	do	4		
Ontario	do	15		
Quebec	do	1		
Saskatchewan	do	6		
Regina	Aug 21–27	7		
China				
Hong Kong	July 17–30	2	2	
Manchuria—				
Dairen	June 27–July 3	1		
Tientsin	July 24–30	1		In mission hospital.
Egypt				
Cairo	Apr 2–8	2		
France				
Lille	July 24–30	1		
Great Britain				
England and Wales	Aug. 14–20			Cases, 103.
Birmingham	do	1		
Leeds	do	3		
India:				
Bombay	July 17–23	17	10	
Calcutta	July 17–30	20	15	
Karachi	July 31–Aug. 6	1		
Rangoon	July 24–30	13	6	
Japan:				
Nagasaki	Aug. 1–7	1		
Java:				
Batavia	July 17–23	1		
East Java and Madura	June 26–July 9	7		
Poland	July 3–9	3	1	
Portugal:				
Lisbon	July 24–Aug. 6	3		
Siam				July 17–23, 1927: Cases, 14; deaths, 4. Apr. 1–July 23, 1927: Cases, 168; deaths, 40.
Bangkok	July 17–23	1		
Union of South Africa:				
Cape Province	do			Outbreaks.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended September 16, 1927—Continued

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria:				
Oran	Aug 1-10	1		
China				
Harbin	July 25-31	3		
Palestine				June 14-27, 1927 1 case. June 28-Aug. 8, 1927. Cases, 12.
Poland				July 3-9, 1927 Cases, 33; deaths, 2.
Union of South Africa				
Cape Province	July 17-23			Outbreaks in 3 districts
Orange Free State	do			Outbreak in Vredevort district

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Senegal:				
St. Louis	Reported Aug 21		1	European.

Reports Received from June 25 to September 9, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China				
Amoy	May 22-July 23	1	1	
Canton	May 1-July 16	12	5	
Kulangsu	June 21	1		
Shanghai	June 19 25	2		
Do	Reported Aug 19			Present.
Swatow	May 15-July 23	86	12	
India	Apr 17-July 9			Cases, 89,569; deaths, 52,631.
Bombay	May 8-July 16	14	5	
Calcutta	do	516	324	
Karachi	May 29-June 4	1	1	
Madras	June 19-July 30	213	108	
Rangoon	May 8 July 16	16	12	
India, French settlements in	Mar. 30-June 30	15	8	
Indo-China (French)	Apr 1-July 10			Cases, 11,145.
Annam	do	1,467		
Cambodge	do	235		
Cochin-China	do	1,354		
Saigon	June 4-July 14	9	4	
Tonkin	Apr 1-June 30	8,089		
Iraq:				
Basra	Reported July 25	9	7	
Persia:				
Abadan	July 19-31		166	
Mohammerah	do		61	
Nasseri	do		10	
Philippine Islands:				
Manila	July 17-23	1		
Bulacan Province	June 7-July 8	3	2	
Leyte Province—				
Barugo	June 29	1	1	
Carigara	June 23	1	1	Final diagnosis not received.
Palo	May 18	1		
Siam	May 1-July 16			Cases, 208, deaths, 118.
Bangkok	do	39	12	
On vessel:				
Steamship Adrastus	Reported Aug. 6	1	1	At Yokohama, Japan.

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 9, 1927—Continued

PLAGUE

Place	Date	Cases	Deaths	Remarks
Argentina	Jan. 1-June 30			Cases, 71; deaths, 44.
Buenos Aires	Apr. 10-May 7	4	3	
Cordoba	Jan. 11-Mar 23	50	29	
Corrientes	June 1	1	1	
Entre Rios	Mar. 29-Aug. 1	3	1	
Santa Fe	Apr 28-May 16	4	3	
Territory—				
Chaco—				
Barranqueras	May 29	2	2	
Formosa	June 25	3	2	
Pampa	Reported July 6	2		
City—				
Merou	Reported July 14			Present.
Rosario	May 7	1	1	
Santa Fe	May 16	4	2	
Azores				
Ribeira Grande	June 12-18			9 miles from port.
St. Michaels Island	May 15-July 30	3		
British East Africa.				
Kenya	Apr 24-July 2	60	14	
Nairobi	May 22-28	6		
Tanganyika	Mar 29-May 28		37	
Uganda	Jan 1-Feb 28	138	121	
Do	Mar 27-June 18	366	300	
Canary Islands				
Laguna district -				
Tejina	June 17	1		
Ceylon				
Colombo	May 1-July 2	17	11	Plague rats, 4.
China				
Amoy	July 3-23			Present in surrounding country.
Ecuador				
Guayaquil	June 1-July 31			Rats taken, 48,290, found infected, 34.
Egypt	May 1-July 8			Cases, 7; deaths, 2.
Alexandria	June 4-10	1		
Biba	do	1		At Nana.
Beni-Souef	June 4-July 13	5	2	
Dakhalia	June 24-July 9	6	1	
Minia	Aug 8-9	4		
Port Said	June 24-July 21	4	1	
Tanta district	June 4 10	1		
Greece	May 1-June 30	4	3	
Athens	June 1-Aug 6	2		Including Piraeus.
Mytilene	Aug 9	1		
Patras	May 30 Aug 6	6	1	
Hawaii Territory.				
Hamakua	July 15			1 plague rodent.
Honokaa	May 17-23	2	2	
Paauilo	July 26-Aug 1		4	
India	Apr. 17-July 9			Cases, 21,700, deaths, 8,253.
Bombay	May 8-July 16	78	65	
Madras	May 1-July 16	205	95	
Rangoon	May 8-July 23	38	35	
Indo-China (French)	Apr. 1-July 10	32		
Kwang-Chow-Wan	May 21-July 10	68		
Iraq				
Baghdad	Apr. 8-May 28	12	1	
Java				
Batavia	May 1-July 16	178	179	Province.
East Java and Madura	May 22-June 18	23	23	
Pasoeroean Residency	May 9			Outbreak reported at Nagdiwono
Surabaya	Apr. 17-May 7	24	24	
Madagascar				Mar. 16-Apr 30, 1927. Cases, 256; deaths, 135.
Province—				
Ambositra	Mar. 16-June 15	73	67	
Antisrabe	Mar. 16-May 15	8	8	
Miarinarivo (Itasy)	Mar 16-May 31	45	45	
Moramanga	May 16-June 15	20	19	
Tananarive	Mar. 16-May 31	196	170	
Tananarive Town	do	22	20	
Nigeria	Mar. 1-May 31	228	177	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 9, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Peru	Apr.-May 31			Cases, 22, deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	do	13	4	
Lima City	Apr. 1-30	5	1	
Senegal	May 23-July 17			Cases, 442, deaths, 259.
Baol	June 2-July 31	45	23	
Cayor Frontier	July 4-31	126	74	
Dakar	June 20-July 30	80	50	
Facel	July 6	17	8	
Guindel	June 20-26	11	2	
M'Bour	July 6-10	28	23	
Medina	June 13-19	2	2	
Pout	July 4-10	1		
Rufisque	May 23-July 30	163	117	
Thies district	do	27	9	
Tivaouane	June 2-July 17	50	32	
Siam	Apr. 1-June 25			Cases, 10; deaths, 7.
Bangkok	May 8-June 11	2	1	
Syria				
Beirut	June 11-July 10	3		
Tunisia	Apr. 21-July 10	144		
Tunis	July 25-Aug. 1	1		
Turkey.				
Constantinople	May 13-19	1		
Union of South Africa				
Cape Province—				
Maraisburg district	May 1-14	2	2	Native.
On vessel	July 10-16	3		On Norwegian vessel at Gavle, 125 miles north of Stockholm.
Steamship Averoff	June 24-30	1		On Greek war ship at port of Athens.
Steamship Ransholm	Aug. 5	3		At Gefle, Sweden, from Rufisque, Senegal.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-July 10			Cases, 648.
Algiers	May 11-June 30	8		
Oran	May 21-July 31	38		
Arabia.				
Aden	July 17-Aug. 1	2	1	
Brazil				
Rio de Janeiro	May 22-July 29	7	8	
British East Africa:				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 29-June 18	2	22	
Zanzibar	Apr. 1-May 31	19	7	
British South Africa				
Northern Rhodesia	Apr. 30-July 23	106	2	
Canada	June 5-Aug. 20			Cases, 368.
Alberta	June 12-Aug. 20			Cases, 92.
Calgary	do	9		
British Columbia—				
Vancouver	May 23-29	2		
Manitoba	June 5-Aug. 20			Cases, 25.
Winnipeg	June 12-Aug. 27	17		
Ontario	June 5-Aug. 20			Cases, 162.
Ottawa	June 12-Sept. 2	100		
Sarnia	Aug. 7-13	1		
Toronto	June 19-July 23	9		
Quebec	June 19-Aug. 20	14		
Saskatchewan	June 12-Aug. 20			Cases, 52.
Moose Jaw	Aug. 14-20	5		
Regina	July 17-Aug. 6	3		
Ceylon	May 1-7			Cases, 3; deaths, 1.
China.				
Amoy	May 8-28	1		
Do	July 3-16			Present in surrounding country.
Antung	July 4-31	3		
Cheefoo	May 8-14			Present.
Foochow	May 8-July 16			Do.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 9, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
China—Continued				
Hong Kong	May 8-July 9	17	16	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-July 30	8		
Dairen	May 2-June 26	9	5	
Fushun	May 15-July 30	10		
Harbin	June 13-July 10	4		
Kai-Yuan	July 3-9	2		
Mukden	May 22-July 30	6		
Penshu	July 3-9	1		
Ssupingkai	May 8-July 9	3		
Tientsin	May 8-July 16	17		
Chosen	Feb. 1-May 31			Cases, 451; deaths, 195.
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr 1-30	1		
Curaçao	May 29-June 4	1		Alastrim.
Ecuador				
Guayaquil	June 1-30	2		
Egypt	May 7-July 29			Cases, 21; deaths, 3.
Alexandria	May 21-June 17	4	1	
Cairo	Jan 22-Apr. 15	12	3	
France	Apr 1-June 30			Cases, 178.
Paris	May 21-June 30	11	2	
Gold Coast	Mar. 1-May 31	33	7	
Great Britain:				
England and Wales	May 22-Aug. 13			Cases, 2,488.
Bradford	May 29-June 11	2		
Cardiff	June 19-July 2	4		
Leeds	July 17-30	2		
Liverpool	do	1		
London	May 15-June 18	2		
Newcastle on Tyne	June 12-Aug. 13	5		
Sheffield	June 12-Aug. 6	25		
Scotland—				
Dundee	May 29-July 2	5		
Greece	June 1-30	14		
Saloniki	July 12-18		1	
Guatemala:				
Guatemala City	June 1 30		9	
Guinea (French)	June 4-10	9		
India	Apr. 17-July 9			Cases, 60,217, deaths, 15,704.
Bombay	May 28-July 16	182	121	
Calcutta	May 8-July 16	343	261	
Karachi	May 15-July 16	9	5	
Madras	May 22-July 30	18	6	
Rangoon	May 8-July 23	156	46	
India, French Settlements in	Mar. 20-June 18	174	111	
Indo-China (French)	Mar. 21-July 20			Cases, 314.
Saigon	May 14-20	1	1	
Iraq:				
Baghdad	Apr. 10-16	2		
Basra	Apr. 10-July 16	2	1	
Italy	Apr. 10-May 21	13		
Jamaica	May 29-July 30	24		Reported as alastrim.
Japan	Apr. 3-May 7			Cases, 19.
Nagasaki City	June 20-July 31	24	6	
Taiwan Island	May 21-31	1		
Java.				
Batavia	May 22-July 16	2		
East Java and Madura	Apr. 24-30	1		
Latvia	Apr. 1-30	1		
Mexico	Mar. 1-31			Deaths, 162.
Durango	June 1-30		1	
La Oroya	Apr. 1-June 30			Present.
Monterey	July 1-31	6	4	
San Luis Potosi	May 29-Aug. 13		11	
Tampico	June 1-July 31	1	2	
Torreon	Aug. 7-13		1	
Morocco	Apr. 1-June 30	154		
Netherlands India:				
Borneo—				
Holoe Soengei	Apr 21			Epidemic in two localities.
Pasir Residency	Apr. 30-May 6			Epidemic outbreak.
Samarinda Residency	May 21-27			Do.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 9, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Nigeria	Mar. 1-May 31	2,077	513	
Persia				
Teheran	Feb. 21-Apr. 20		5	
Poland	Apr 19-July 2	14	1	
Portugal				
Lisbon	May 29-July 23	14	1	
Senegal				
Medina	July 4-10	7		
Siam	May 1-July 16			Cases, 103, deaths, 22
Bangkok	May 15-July 16	11	4	
Spain				
Valencia	May 29-June 4	2		
Straits Settlements	June 12-18			Cases, 3.
Singapore	Apr 1-May 28	4	2	
Sumatra				
Medan	June 5-11	2		
Switzerland.				
Berne	June 26-July 2	1		
Tunisia	Apr. 1-June 10			Cases, 10.
Tunis	June 1-10	1		
Union of South Africa				
Cape Province—				
Elliott district	May 11-June 10			Outbreaks.
Idutywa district	July 3-9			Do.
Kalanga district	May 11-June 10			Do.
Transvaal—				
Barberton district	May 1-7			Do.
Venezuela				
Maracaibo	July 12-18		1	

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr 21-July 20			Cases, 399, deaths, 39.
Algiers	May 11-July 31	26		
Oran	May 21-July 31	32		
Bulgaria	Mar 1-June 20			Cases, 206, deaths, 18.
Sofia	June 4-Aug 5	2		
Chile				
Antofagasta	Apr. 16-May 31	1		
Concepcion	May 29-June 4		1	
La Calera	Apr 16-May 31	1		
Lagun	Mar 16-31	2		
Puerto Montt	Apr 16-May 31	1		
Santiago	do	5	1	
Talcahuano	July 10-16		1	
Valparaiso	Apr 16-Aug 6	4	1	
China.				
Manchuria—				
Mukden	May 29-June 4	1		
Tientsin	July 10-16	1		
Chosen	Feb 1-May 31			Cases, 512; deaths, 42.
Chemulpo	May 1-June 30	15	1	
Gensan	do	2		
Seoul	Apr 1-June 30	30	2	
Czechoslovakia	do			Cases, 49.
Egypt	May 28-July 29			Cases, 120, deaths, 18.
Alexandria	May 21-Aug 5	13	5	
Cairo	Jan. 15-Apr 22	30	8	
Estonia	Apr. 1-30			Case, 1.
Greece	June 1-30	2		
Athens	do		9	
Iraq:				
Baghdad	Apr. 24-30	1		
Irish Free State.				
Cork County	July 3-9	1		In urban district.
Latvia	Apr. 1-May 31	17		
Lithuania	Feb. 1-June 30	303	37	
Mexico	Feb. 1-Mar. 31			Deaths, 88.
Mexico City	May 29-Aug. 6	26		Including municipalities in Federal District.
San Luis Potosi	July 31-Aug. 6		1	
Morocco	Apr. 1-July 10	815		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 9, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Palestine	May 24-June 6			Cases, 3.
Haifa	May 24-Aug. 8	6		
Jaffa	Aug. 2-8	1		
Jerusalem	June 28-July 4	1		
Mahnaim	May 17-23	1		In Safad district.
Nazareth	July 19-25	1		
Safad	May 17-Aug. 8	8		
Peru				
Arequipa	Apr 1-30		1	
Poland	Apr 10-July 25	976	98	
Portugal.				
Lisbon	May 29-June 4	1		
Rumania	Apr 3-June 25	923	61	
Tunisia	Apr 22-July 20			Cases, 158.
Tunis	July 5-11	1		
Turkey.				
Constantinople	May 13-19		2	
Union of South Africa	Apr 1-30			Cases, 55; deaths, 8, native. In Europeans, cases, 2
Cape Province	Apr 1-July 9	42	5	
Albany district	June 5-11			Outbreaks
East London	May 22-28	1		Do.
Glen Grey district	May 1-7			Do.
Kentani district	June 26-July 2			Do
Qumbu district	May 1-7			Do.
Umzimkulu district	June 26-July 2			Do.
Natal	Apr 1-July 9	7	3	
Impendhle district	June 5-11			Do
Orange Free State	Apr. 1-May 28	5		
Transvaal	Apr. 1-30	1		
Johannesburg	July 3-16	18	5	
Yugoslavia	May 1-July 31			Cases, 15, deaths, 4.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Dahomey (West Africa):				
Porto Novo	July 1	1	1	In Syrian woman
Gold Coast	Apr 1-May 31	45	20	
Liberia				
Monrovia	May 29-July 8	4	5	
Senegal	May 27-July 31			Cases, 5, deaths, 2.
Dakar	July 9	1		
Do	Aug. 8	2	2	
M'Bour	May 27-June 19	5	5	
Ouakam	June 2-Aug 8	2	1	
Thies	July 10	1	1	In European.
Tivaouane	May 27-June 8	5	5	

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TREASURY DEPARTMENT

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ISSUED WEEKLY

BY THE UNITED STATES PUBLIC HEALTH SERVICE

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SPECIAL ARTICLES

UNITED STATES
GOVERNMENT PRINTING OFFICE
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UNITED STATES PUBLIC HEALTH SERVICE

HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

Asst. Surg. Gen. R. C. WILLIAMS, *Chief of Division*

The PUBLIC HEALTH REPORTS are issued weekly by the United States Public Health Service through its Division of Sanitary Reports and Statistics, pursuant to the acts of Congress approved February 15, 1893, and August 14, 1912.

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PUBLIC HEALTH REPORTS

VOL. 42 SEPTEMBER 23, 1927 NO. 38

MOSQUITO CONTROL BY AIRPLANE

MEMORANDUM ON THE DISTRIBUTION OF PARIS GREEN BY AIRPLANE IN THE CONTROL OF ANOPHELES PRODUCTION IN UNCLEARED POND NEAR BAMBERG, S. C., SEPTEMBER 8, 1927

Owing to the tremendous and rapid development of hydroelectric power and the consequent impounding of water in the South, it has been necessary for the various State boards of health and the malariologists of the United States Public Health Service to give serious attention to the possibility of the use of the airplane in controlling *Anopheles* production in these areas.

Experience at Quantico, Va.,[1] had shown that a mixture of Paris green and powdered soapstone, when applied from an airplane flying over dense vegetation, penetrated the vegetation and reached the surface of the water in doses lethal to anopheline larvæ.

The South Carolina State Board of Health was anxious to have a practical demonstration of the effectiveness of this procedure and offered, for experimental purposes, a heavily overgrown pond near Bamberg, in which dense vegetation, both bushes and trees, shaded almost all of the water surface, flotage was heavy, and the production of *Anopheles quadrimaculatus* was large.

At the request of the Public Health Service and the South Carolina State Board of Health, the Navy Department lent an airplane with Marine Corps fliers.

An abandoned field near the pond was cleared by the citizens of Bamberg for use in landing and loading.

The plane, a Ford transport monoplane, was sent from Anacostia to Quantico, where there was installed a plain metal hopper with a sliding valve opening into a venturi tube below the fuselage. The plane was then flown to Bamberg ready for the demonstration.

The day before the flight the undersigned traversed those portions of the pond where brush was most dense, making hundreds of dippings among the flotage, searching for *Anopheles* larvæ. Larvæ averaged five per dip. Eleven out of every thirteen dips secured larvæ.

On September 8, at 11 a. m., 500 pounds of Paris green, with an equal quantity of soapstone, was distributed by the plane over the 500 acres of pond, the plane making two trips with a 500-pound load per trip. The plane flew about 50 feet above the tops of the trees;

[1] Public Health Reports, Feb. 18, 1927. (Reprint No. 1140.)

the breeze was very light, the day being nearly calm and clear and bright. The total time of the flight, including landing and reloading, was 1 hour and 30 minutes.

The plane made successive trips across the pond and up and down the pond, gridironing the area with paths approximately an eighth of a mile apart. There seemed to be a fairly even distribution of the dust over the 500 acres of pond.

Immediately prior to the flight a number of visitors entered the pond with dippers and assured themselves of the heavy mosquito breeding. Two hours after the commencement of the flight these visitors reentered the pond and dipped for larvæ in order to observe the earliest effects. In the small clear areas no live larvæ at all were found and many dead ones were picked up. Where trees and bushes covered the water all full-grown larvæ were dead, but some first-stage larvæ were still alive.

On September 9, 22 hours after the dusting flight, the writers went into the pond where the vegetation was densest and the flotage heaviest. Two boats were used, winding about over approximately 12 acres near the lower end of the pond, with the following results:

In all types of flotage 703 dips were made, and there were found three living *Anopheles* larvæ (two first stage and one early second stage), 84 dead *Anopheles* larvae, and six living pupæ.

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VOLUNTARY REPORTING OF CANCER AIDS MASSACHUSETTS CANCER STUDIES

Prompted by the fact that the State of Massachusetts had the highest rate of all the States for cancer in 1925, the State legislature, by resolution, in 1926, directed the State department of public health to investigate the cancer situation, not only with respect to the facilities for the institutional care of advanced cases, but also with reference to the incidence of the disease in the State. Preliminary findings were announced, funds for further investigation have been appropriated, a cancer hospital for patients in all stages of the disease, operated by the State, was formally opened at Norfolk, Mass., on

June 21, 1927, and the cancer program of the State department of public health is well under way.

The cancer hospital at Norfolk is the nucleus of a state-wide group of affiliated cancer clinics which are being organized in established hospitals throughout the State wherever professional and material resources are sufficient to maintain them. It is upon these State cancer clinics that will rest chiefly the measures directed toward early recognition and prompt and effective treatment of the disease in the State. From these clinics accurate information for both the public and the physician will be given out in every community in the State, and this information will be supplemented by the State department of public health through proper channels of publicity.

With regard to the study of the incidence of cancer, little was known regarding the prevalence of cancer morbidity in the community at large, and the need for such information was felt at once. The mortality figures and hospital records for cancer are available, but the number recovering from the disease is unknown. The question then arose as to whether cancer should be made reportable with the communicable diseases, and, for reasons presented below, was decided negatively. The matter was presented to the Newton Medical Club in the fall of 1926, together with an outline of the studies being undertaken by the State department of public health, and it was voted that the physicians should voluntarily report cancer cases to the local board of health. Newton, Mass., thus became the first city in the United States to report cancer.

In a recent communication to the Journal of the American Medical Association,[1] Dr. Francis George Curtis, chairman of the board of health of Newton, and Dr. George H. Bigelow, State commissioner of public health of Massachusetts, had the following to say regarding the development of this part of the cancer investigation and the report form used by the physicians of Newton:

In outlining the cancer program of the Massachusetts Department of Public Health the need for cancer morbidity statistics was at once apparent. While mortality figures and hospital records for this disease are available and have been freely studied, little is known regarding cancer morbidity in the community at large. Those who die of cancer can be enumerated, but the numbers who recover from this disease are largely estimated. In an effort to determine the extent of the disease in Massachusetts various mathematical compilations were made, but these are all theoretical and may not even approximate the truth. (Cancer in Massachusetts, Boston M. & S. J. 194:388 (March 4) 1926.)

To offset this lack of knowledge, it has been suggested that cancer be made a reportable disease. In Massachusetts at least, this would be a distinct innovation, since at present all reportable diseases are communicable. As this list numbers 38, one should think well before making it more formidable. Again, much complaint is heard regarding the inadequacy of present reporting. This would hardly be reduced by further burdening the physicians, particularly

[1] J. A. M. A., Sept. 3, 1927, pp. 809, 810.

with a disease the reports of which would be used primarily for statistical purposes. One factor in the accuracy and adequacy of reporting is the concreteness of the clinical entity—the less defined the more inadequate. This is one reason why our measles morbidity is probably more accurate than our influenza morbidity, for example. Thus, if universal cancer reporting were at all accurate, it would in general be so late as to be little more than a brief anticipation of the death returns; or, if early and unless adequate diagnostic resources were liberally available and liberally used, it would be little more than a recording of early cancer symptoms. Neither of these conditions would advance appreciably our knowledge of the incidence of the disease or of the proportion of cured cases. Thus we have opposed general reporting of cancer for the present.

However, when the physicians of a given community are willing to report voluntarily in an effort to determine the practicability and value of such a procedure it is quite another matter. This has happened in Newton. The whole matter was presented to the Newton Medical Club last fall, and the value of an experimantal morbidity reporting area to the studies of cancer being conducted by the State department of public health was outlined. It was voted to report cancer cases to the local board of health, and the president of the club was authorized to appoint a committee to direct this work, of which the chairman of the board was made chairman. Another committee was appointed to organize a cancer clinic in the Newton Hospital in order that diagnostic and treatment facilities might be more generally available. This has been done. The accompanying report form was adopted:

CANCER MORBIDITY REPORT FORM

Name.................................... Sex .... Age ....
Address...
Civil condition ....
Type of disease..
Location of disease ....
Date of first symptom..
Character of first symptom. Pain, lump, abnormal discharge.....................................
Date of first consulting physician ....
Has any member of patient's family had cancer ....
Relationship ....
Has patient ever been in close association with a cancer patient ....
Injury at site of cancer ....
Operation for cancer—what ....
Operation other than for cancer—what ....
Does patient use alcohol ....
Does patient smoke (pipe, cigar, cigarette)—chew ....
Does patient have periodic craving for unusual articles of food................................
What ....
Does patient eat little or much salt...
What foods does the patient never eat..
Is patient constipated ....
Has patient suffered from chronic disease......... What .... How long ....
Interval between first symptoms and treatment .... X ray .... Radium.......
Housing.. Economic status.........
Number of physicians consulted .... Number of irregular practitioners consulted.........
Possible precancerous condition at site of disease (mole, wort leukoplakia, ulcer, uterine tear, chronic irritation from teeth, from corsets, other known chronic irritation ....

(Physician's signature)

....

(Address)

....

(Telephone number)

In the first seven months of morbidity reporting, 30 cancer cases in residents and 12 cases in nonresidents were reported to the local board of health. During this period there were 29 deaths from cancer among residents, of whom only 5 had been reported, a ratio of 1 to 6. If the same ratio applies to the cancer cases as to the cancer deaths, there were in Newton during this period about 175 cases. This figure is fairly close to the one obtained when an attempt was made to estimate the number of living patients from the cancer mortality records.

It is realized that the response of the Newton physicians has not been as complete as might be desired, but the present indications point to an improvement in this respect. As Newton is the first city in the United States to report its cancer cases, this statement seems advisable, as it indicates a method which might be used in other selected communities to add materially to our knowledge of this pressing problem. Also appreciation should be expressed of the fact that busy practitioners of a community are willing to take on this added obligation.

THE RATIO OF THE SEXES

Based on the accumulated records for the eight years 1917–1924, published by the Bureau of the Census in its Birth, Stillbirth, and Infant Mortality Statistics, the ratio of male to female births in the United States birth registration area is 1.06, or 106 boys born for each 100 girls. The ratio is shown to vary according to the age of the mother, being 1.23 for very young mothers—that is, those under 15 years of age—and 1.055 for mothers 35 to 54 years of age. There are also certain differences in the sex ratio between legitimate and illegitimate children. The ratio in the United States birth registration area for the eight-year period, according to the age of the mother, is as follows:

Age of mother:	Sex ratio (Male to female)	Standard error
Under 15 years	1. 229	±0. 0200
15 to 34 years	1. 060	± . 0005
35 to 54 years	1. 055	± . 0010
All ages	1. 059	± . 0004

Commenting on the change in the sex ratio as found among the adult population, the Statistical Bulletin of the Metropolitan Life Insurance Co. for July, 1927, states:

The ratio of the sexes in the actual population may be expected to differ from the ratio at birth. This is because of the operation of two forces, the first being differential mortality of the two sexes, and, second, differential immigration. The death rate is always heavier among males, and this has the effect of bringing down the initial excess of males perceptibly. Immigration, on the other hand, brings in a considerable excess of males over females, and the effect of this factor is to help to restore the initial disparity between the sexes. In the United States the ratio of males to females in the actual white population is 1.040, as contrasted with 1.060 at birth. In a stationary American population—that is, one in which immigration would be eliminated and in which the birth rate and death rate were balanced—the ratio of males to females would be 1.013. In other words, the effect of the higher male mortality would be very nearly to strike a balance between the two sexes.

The following table is given, comparing the sex ratio in the white population of the United States, 1.040, with the ratios for other countries:[1]

Sex ratio of population in several countries

Country	Males per 100 females	Country	Males per 100 females
Great Britain	93.5	Belgium	98.4
Norway	94.0	Italy	99.0
Denmark	94.5	Poland	100.5
Sweden	95.3	Greenland	101.5
Spain	95.3	Japan	102.0
Austria	96.6	India	104.1
Germany	96.9	Bulgaria	104.5
European Russia	97.2	Serbia	106.0
Switzerland	97.2	Siberia	106.0
Hungary	97.7	Caucasus	111.0
France	97.9	Korea	113.0
Holland	98.2	Asiatic Russia	117.5
Ireland	98.3	China	125.0

The Statistical Bulletin comments:

In the European countries the sex ratios are almost all below a hundred, which means that there is an excess of females over males. These figures are largely the result of the heavy migration of males and, secondarily, the higher mortality among males. In the Asiatic and in some of the less advanced European countries, the ratios are very heavily in favor of males. In China, for example, the figure is 125 males for 100 females. Undoubtedly this is an exaggerated picture, because there is a tendency among eastern nations to regard the female lightly and this probably results in many escaping enumeration. But even making allowance for this, it is significant how, in these countries, the proportion of surviving males as compared with females rises materially above 100 per cent. In spite of woman's naturally greater resistance to ordinary life hazards, the survival of women is less than that of men, just the reverse of what we observe in our own country and the advanced portions of Europe.

CURRENT WORLD PREVALENCE OF DISEASE

REVIEW OF THE MONTHLY EPIDEMIOLOGICAL REPORT ISSUED AUGUST 15, 1927, BY THE HEALTH SECTION OF THE LEAGUE OF NATIONS' SECRETARIAT[2]

Cholera.—A serious extension of cholera in western India and across the Persian Gulf in the spring and early summer months of 1927 is reported in the Monthly Epidemiological Report of the health section of the League of Nations' Secretariat for August. The disease had been confined to the drainage basins of the Bay of Bengal and the South and East China Seas during the last two years. The sudden outbreak during March in the districts of Belgaum, Dharvar, and Bijapur in Bombay Presidency, where only sporadic cases occurred in 1925 and 1926, resulted in 10,000 deaths during the 13 weeks between March 20 and June 18, which is more than the annual number reported in the whole Presidency since 1919.

The spread of the disease into the Persian Gulf area is described in the report as follows:

[1] The figures are taken from an article by A. S. Parkes, in the Eugenics Review, vol. 17, p. 285.
[2] From the Office of Statistical Investigations.

The west coast of India is connected with the Persian Gulf by numerous small native craft over which a close sanitary control is most difficult. A cholera epidemic in any part of this area is therefore a menace to the surrounding countries. Cholera appeared in the ports of Iraq shortly after the middle of July. Five fatal cases were reported at Basra during the week ended July 23, and 29 cases and 18 deaths during the following week. The disease broke out at the same time at Mohammerah, a Persian port about 20 miles below Basra on the Shat-el-Arab, where 52 cases and 37 deaths were reported during the week ended July 30. At Abadan, still farther down the river, which is an important port for oil exportation, cholera broke out in severe form and 159 cases were reported up to July 31, of which 122 cases, with 103 deaths, occurred during the week ended July 30. The explosive manner in which the outbreak has begun and the high case mortality rate show the gravity of the situation. The area around Shat-el-Arab had been free from cholera since 1923, when there were over 1,100 deaths in Iraq, most of which occurred at Basra, about 1,000 occurring at Abadan.

The total number of deaths from cholera in India the first half of June approximated the 1924 figures, when cholera was last epidemic, but were far below the 1921 level. The incidence of the disease in the current year, however, probably had not reached its maximum at the time of the latest reports. The situation in the endemic centers of Bengal and the Madras Presidency was relatively favorable, and the incidence was lower than a year ago in Assam and Burma. In Bihar and Orissa and in the United Provinces cholera spread rapidly during May and June and was beginning to increase in the Punjab. The deaths in each of the Provinces from March 20 to June 11 are shown in Table 1, by four-week periods, together with corresponding totals for 1926.

TABLE 1.—*Cholera deaths reported in the Provinces of India from March 20 to June 11, 1926 and 1927*

Province	1926			1927		
	Mar. 20–Apr. 17	Apr. 18–May 15	May 16–June 12	Mar 20–Apr. 16	Apr. 16–May 14	May 15–June 11
Punjab and Delhi	2	0	2	4	201	580
United Provinces	260	354	459	130	1,885	5,329
Bihar and Orissa	2,269	2,091	1,762	1,416	3,697	7,457
Bengal	5,151	2,533	714	2,096	2,740	1,302
Assam	290	644	888	361	261	334
Central Provinces	112	137	205	383	301	1,517
Madras Presidency	1,003	421	351	1,130	1,367	1,598
Bombay Presidency	1	1	8	4,713	3,821	2,217
States in Bombay Presidency	0	0	0	303	535	435
Burma	533	722	511	228	246	203
Other Indian States	1	44	36	35	85	422
Total	9,622	7,547	4,926	10,799	15,139	21,394

Cholera has been prevalent in parts of French Indo-China, though not epidemic to the extent that it was last year except in Tonkin. The maximum incidence seems to have been reached in June, as the cases reported for the first 10 days of July showed a marked decline.

TABLE 2.—*Cases of cholera reported in French Indo-China, March 21 to July 10, 1927*

Province	Mar. 21-31	April—			May—			June—			July 1-10
		1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20	21-30	
Annam	0	0	0	19	94	293	148	256	337	289	31
Cambodia	59	63	15	12	18	22	25	21	21	2	36
Cochin-China	16	36	51	170	141	178	140	198	135	180	125
Tonkin	50	157	320	879	884	1,120	900	1,271	1,074	917	567

There has been no cholera this year to date of report in Japan nor in the Japanese dependencies.[1] There were a few cases of cholera reported at Canton during June and July.

Plague.—The incidence of plague has been unusually low thus far in the current year in nearly all its endemic centers. The only Asiatic ports reporting any cases during July were Bombay, Rangoon, and Bassein. In all of India only 600 cases were reported during the three weeks ended June 18 as compared with 7,594 in the corresponding period of the preceding year.

There were two cases of plague at Beirut, Syria, in July, and three cases at Patras, Greece, in June. In Tunis, where 126 cases of plague occurred in May, the outbreak seemed to have terminated, as only 12 cases were reported between June 1 and 20, and only 1 case in the first 10 days of July.

In the Cossack Republic (Union of Socialist Soviet Russia), where 16 cases of plague were reported in the two weeks ended June 4, there was only one additional case during the next four weeks.

Yellow fever.—In Senegal one case was reported on July 12, at Thies, and one each at Bambey and Khombole on July 27. There was one case at Porto Novo in Dahomey on July 1, but no further case up to July 21. At Monrovia, in Liberia, there were two cases of yellow fever during June.

Smallpox.—Reference is made to outbreaks of virulent smallpox during the first half of 1927 in Algeria, Nigeria, and the Hedjaz with the following comment:

Smallpox of a virulent type was still widespread in June and July in Algeria; 1,404 cases were reported during the first half of 1927.

A severe outbreak of smallpox in Northern Nigeria appears to have reached its maximum in April; 2,502 cases and 584 deaths were reported during the first five months of the year. The proportion of deaths is higher than during the last epidemic in 1925.

Smallpox was prevalent in April and May in the Hedjaz, and cases continued to occur in June and July, although the incidence was much lower; 419 cases and 213 deaths were reported in the four chief towns, Jeddah, Mecca, Medina, and Taif, between March 19 and May 6. There was one smallpox case among Egyptian pilgrims returning through El Tor during the week ended July 20.

[1] 1 case and 1 death in Yokohama during the week ended Aug. 6, 1927—Ed.

Enteric fever.—Enteric fever was less prevalent than usual in June in the Scandinavian countries, in Finland, and in the Netherlands. In Germany a seasonal increase during June was evident, but the incidence remained lower than in previous years. In Poland an increase in the disease occurred in May but did not continue into June. In England and Wales, however, the incidence in June and the first half of July was higher than at the corresponding season of the preceding five years, except for 1924. The June incidence was above the normal also in France and Italy.

Enteric fever is reported to be less prevalent in Japan than in preceding years; "10,101 cases of typhoid and 1,032 cases of paratyphoid were reported between January 1 and June 25, as against 17,701 and 1,244 cases, respectively, during the corresponding period of 1926."

Dysentery.—"No unusual prevalence of dysentery in any European country was indicated by the reports received up to the end of July," states the report.

Acute poliomyelitis.—The seasonal rise in poliomyelitis comes in late summer, but in Germany, at the beginning of July, the incidence was higher than at the corresponding season in 1926. There were 87 cases reported in Germany during the four weeks ended July 16 as compared with 57 cases in the corresponding four weeks of 1926. The disease has been more prevalent than in 1926 also in the United States.

There were no serious outbreaks of poliomyelitis in countries of the Southern Hemisphere during the past autumn.

Scarlet fever.—"The seasonal movement of scarlet fever in the western half of Europe has, on the whole, become less pronounced and regular in recent years," states the report. "In England and Wales, the incidence increased by about 25 per cent in June and July as compared with March and April. In the Irish Free State more than twice as many cases were reported in June as in March. There was also a slight increase in May and June in Italy, France, and the Netherlands. In Germany the incidence remained practically at the same level from April to the end of June, but was about twice as high as in 1925 and 1926 and three times as high as in 1923 and 1924 for the corresponding period. There was a small outbreak in June in Greece, causing 30 deaths."

Vincent's angina.—Through the Australian Health Service the health section of the League was informed "that an epidemic of Vincent's angina followed by severe broncho-pneumonia was reported in June from Rabaul in the New Britain Mandated Territory (north of New Guinea). There were many deaths in distant isolated areas."

Epidemic diseases in China.—Information on epidemic diseases in China received from the National Epidemic Prevention Bureau indi-

cated that in February plague was prevalent in Fukien Province and absent from the other Provinces (no report from Kwangsi and Shensi); cholera was reported sporadic in Kwantung and Shantung Provinces; and smallpox was reported epidemic in Hanan and Szechuan Provinces and prevalent or sporadic in all others reporting except Kiangsi and Yunnan.

COURT DECISIONS RELATING TO PUBLIC HEALTH

Law for eradication of bovine tuberculosis upheld.—(Iowa Supreme Court; Lausen *v.* Board of Supervisors of Harrison County et al., 214 N. W. 682; decided July 1, 1927.) The plaintiff, a resident of Harrison County and the owner of farm land in the county and also the owner of certain breeding cattle, brought an action to restrain the defendant county board of supervisors from putting into operation the provisions of the law relating to the county-area plan for the eradication of bovine tuberculosis. He contended that certain sections of the law were violative, for various reasons, of provisions of the State and Federal constitutions. The trial court dismissed the plaintiff's petition and this action was affirmed by the supreme court, which stated that it was unable to see where any constitutional provision had been impinged or violated by the sections attacked.

Creation of water district and assessments against property therein upheld.—(Kentucky Court of Appeals; Ryan *v.* Commissioners of Water District No. 1 of Kenton County et al., 295 S. W. 1023; decided June 24, 1927.) In an equitable action to test the validity of the organization of a water district under the provisions of chapter 139, acts of 1926, the plaintiff contended that notice by publication, as provided in the act, of the filing of the petition for the creation of the water district, of the time of hearing on the assessment roll, and of the time of hearing upon the final report before the county court, was not due process of law. The court of appeals first decided that the legislature had power to authorize the creation of such districts, and then held that notice by publication, as provided for by the law, was due process of law. The court also held that, the necessary notices having been published and the plaintiff having taken no step manifesting objection to any of the proceedings in the county court, he had waived his right to call in question the validity of the assessments. The authority to issue bonds, given by the act to the commissioners of the district, was also upheld by the court.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Sewage Disposal in 1927. J. D. Watson. *Surveyor*, vol. 72, No. 1849, July 1, 1927, pp. 5–7. (Abstract by R. E. Thompson.)

A general discussion of sewage disposal, with special reference to English practice. Land irrigation is probably the soundest method of purification where soil and subsoil conditions are suitable and the volume of sewage to be treated is well within the purifying capacity of the area available—1 acre per 100 contributing population. Contact beds are not considered either a sound or economical method of freeing sewage from its tendency to putrefy. Percolating filters are popular, and deservedly so. The initial cost is higher than for an activated sludge plant, but maintenance and operating costs are lower. Compared with an activated sludge plant, a percolating filter installation may be called "foolproof," and its bacterial population is wonderfully adaptable to varying conditions, including change of temperature and character of sewage to be treated. The activated sludge process is not as popular as it was, probably as a result of "the untoward zeal of some of its advocates and their belated consciousness of its limitations." It has been proved to be scientifically sound and its suitability for certain kinds of work is unchallenged, but it is not suitable for the treatment of all kinds of sewage, nor is it economically adaptable to all situations. Its successful application requires more knowledge and skillful management and it is not, generally speaking, as reliable under all circumstances as the older and better-tried methods. Lagooning is the most popular method of sludge disposal. The Imhoff tank has not found favor in England.

The Wet Kata-Thermometer as an Index of the Suitability of Atmospheric Conditions for Heavy Work. H. M. Vernon. *Journal Industrial Hygiene*, vol. 9, No. 7, July, 1927, pp. 287–296. (Abstract by Leonard Greenburg.)

This paper is based largely on studies made by the author and two other investigators, T. Bedford and C. G. Warner, on the working capacity of coal-miners in relation to the wet kata cooling power. Observations were made of the duration of rest pauses and the time required to fill mine tubs. It was found that with a decrease in the mean wet kata cooling power from 18.6 to 6.4, the working time fell from 52.7 minutes per hour to 37.6 minutes per hour, with a corresponding tub-filling time increasing from 8.0 to 9.6 minutes and a consequent rate of production decreasing from 100 to 59. The effective temperature was found to increase from 65.8 to 81.2 under these conditions.

Comparing the rate of production with the wet kata-thermometer observations it appears that the fall in production was 41 per cent, with a decrease in cooling power of 12.2 units, whereas when the effective temperature is reclassified and compared with the rate of production one observes a fall of only 10 to 15 per cent with a change of 19.2° in effective temperature. By further analysis of the studies at high and low velocity air currents the author arrives at the conclusion that the effective temperature considerably underestimates the importance of air velocity, whereas the wet kata cooling power underestimates it to a somewhat lesser extent.

The author presents a table taken from one of Yagloglou's publications which shows the relation between effective temperature and rectal temperature. In this table the data relate to four groups of effective temperatures and in each group this effective temperature has been obtained by the use of various dry bulb temperatures in combination with relative humidities from 5 to 100 per cent. The proportional rise in rectal temperature at various relative humidity percentages is shown. From these data it appears that when the relative humidity is low and the effective temperature varies from 95° to 106.4°, the rectal temperature does not apparently increase as much as it does when the same effective temperature is obtained by the use of higher wet-bulb temperatures. It would appear from this, according to the author, that the effective temperature scale does not give proper significance to the factor of the wet-bulb temperature.

Ventilation Standards. W. J. McConnell. *American Journal of Public Health*, vol. 17, No. 3, March, 1927, pp. 251–253. (Abstract by Leonard Greenburg.)

The object of this paper is to emphasize the need for determining adequate standards by which to evaluate atmospheric conditions as they affect the human body. The author points out the necessity for the consideration of the three essential factors—dry-bulb temperature, wet-bulb temperature, and air motion. The experiments conducted by the United States Bureau of Mines, the United States Public Health Service, and the American Society of Heating and Ventilating Engineers, in a cooperative study at Pittsburgh, are cited as taking into consideration all of these three factors. No single instrument exists which records these three factors, but the resulting influence may be obtained from a scale known as the effective temperature scale.

For school children, the New York State Commission on Ventilation found 66°- 68° F., with moderate relative humidity and moderate air movement, to be optimum, while for men at work the figures given by the National Research Council are about 71°–72°, relative humidity 40–50 per cent, and for women the optimum is probably 7°–8° higher. Finally, it may be pointed out that optimum conditions for different persons may, in general, be between 63° and 71° effective temperature, and for most persons normally clothed and at rest in mild weather is 66° effective temperature. The author raises the question as to whether a single optimum condition should be maintained, as contrasted with a varying condition in order to escape monotony. He finally closes by pointing out the nature of the experiments remaining to be performed in order to elucidate these questions.

Temperature, Humidity, and Air Movement in Industries: The Effective Temperature Index. C. P. Yagloglou. *Journal of Industrial Hygiene*, vol. 9, No. 7, July, 1927, pp. 297–309. (Abstract by Leonard Greenburg.)

This contribution presents a review of much of the work which has been done on the effective temperature index both at the laboratory of the Bureau of Mines and at the Harvard School of Public Health. All of the data have been taken from previous publications and show the relationship between dry-bulb temperature, wet-bulb temperature, and air motion, and the resulting effective temperature produced by the combination of these three conditions. It is pointed out that the comfort zone based on effective temperature takes account of diurnal and seasonal acclimatization. For normally clothed subjects it is held that the lower region of the comfort zone is 62.3° and probably the highest region is 80°.

Considerable space is devoted to a discussion of physiologic reactions and their relation to effective temperature. In all probability the rectal temperature and pulse rate yield the best correlations with effective temperature. Data are presented which seem to indicate that there exists a satisfactory relation between effective temperature and physiologic responses, both at rest and at hard work.

The decrease of work output under various conditions of effective temperature is strikingly shown, as is also the effect of air motion on output. A dry-bulb temperature of 90° to 100° and air movement of 350 feet a minute increases the output approximately 70 per cent when the work is based on equal increases in pulse rate and, roughly, 30 per cent when based on equal rise in rectal temperature.

The Respective Per Capita Space Requirements for Window and Mechanical Ventilation. C.-E. A. Winslow. *Journal of the American Society of Heating and Ventilating Engineers*, vol. 33, No. 5, May, 1927, p. 326. (Abstract by Leonard Greenburg.)

This brief note is a written discussion of a paper originally appearing in the March, 1927, issue of the *Journal of the American Society of Heating and Ventilating Engineers*. In this discussion Professor Winslow points out that the authors of several papers have recently assumed that mechanical ventilation may be conducted efficiently with a per capita space of 200 cubic feet per pupil or less,

while they continue to assume that window ventilation requires 300 cubic feet or more. It is pointed out that the basis for this discrimination is a sentence in the report of the New York State Commission on Ventilation which says that in the window gravity ventilation studies 250 cubic feet per second-grade child and 310 cubic feet per sixth-grade child was used. This is a true statement, but it is to be remembered that for all practical purposes the fan-ventilated rooms had space allowances of approximately the same value. It is further pointed out that in certain cases the fan-ventilated schools had larger space allowances (chs. 19 and 23). The author concludes that there is not the slightest basis in the work of the New York State Commission on Ventilation for the assumption that window-ventilated rooms must be designed with more cubic space per pupil than fan-ventilated rooms.

Experimental Bacterial and Chemical Pollution of Wells via Ground Water, and the Factors Involved. C. W. Stiles, H. R. Crohurst, and Gordon E. Thomson. Hygienic Laboratory Bulletin No. 147, U. S. Public Health Service. 168 pages. (Abstract by H. R. Crohurst.)

In this publication there are assembled the results of nearly three years of experimental study of the artificial contamination of ground water, bacterially by sewage organisms and chemically with the dye (uranin), in the vicinity of Fort Caswell, N. C. The data presented include the geology and hydrology of the experimental area, the types of experimental wells and pits used, meteorological observations, ground-water elevations, detailed results of the spread of pollution by the aid of tables and diagrams, and the technique employed in conducting the investigation.

Briefly summarized, the results of the study are as follows: (1) The soil and ground water at the experimental plot were free from *B. coli* contamination prior to the artificial dosing of pits and ground water; (2) *B. coli* was recovered from the ground water in 1,213 samples taken under the most rigid technique at distances varying from 1 to 232 feet away from experimental trenches into which uranin and excreta pollution were placed; chemical pollution (uranin) was recovered from experimental wells up to 450 feet from the same trenches; (3) both uranin and *B. coli* traveled in only one direction, namely, in the direction of ground-water flow, and did not appear to expand laterally (in a fan shape) with the trench as the apex of a section of a truncated cone, but, on the contrary, it appeared to contract to narrower breadths, with the trench representing the base of a truncated section of a cone; (4) *B. coli* tends to localize in the upper blanket at or near the ground-water table, and water samples in a given well from this blanket may show heavy *B. coli* pollution, while water a few inches lower may be free from *B. coli;* (5) when the ground water falls, *B. coli* tends to filter out into the capillary fringe or (in case of still further fall) into the soil, and if the soil remains dry sufficiently long, *B. coli* dies. Wet weather (with high ground water) is, therefore, conducive to the extension of pollution; dry weather (resulting in the lowering of the ground water) is inhibitive to the extension of pollution and conducive to purification of the ground water; (6) chemical pollution (uranin) appeared to float out in a blanket at or parallel with and close to the ground-water table and tends to filter out (upon fall of the ground water) into the capillary fringe and soil, but does not seem always to rise with higher ground water; (7) experimental *B. coli* infection of the ground water remained alive for two years and eight months at the date of last examination (June 18, 1925), and uranin remained visible in the ground water for two years and seven months when last examined (June 5, 1925); (8) the changes of the ground-water elevations appear to be very complex and of at least four kinds: (*a*) Upward trend of the ground-water table more or less generally attributed to hydraulic pressure from some point upstream; (*b*) the superposition of new ground water by transit from surface water downward to an old ground-water table; (*c*) a new ground-water table due to a flow of new water from upstream over a former ground-water table;

and (*d*) a wave flow from upstream over a former ground-water table. These movements seem to play an important rôle in the progression of the pollution, carrying the bacteria along to more distant points.

Prevention of Phenol Taste with Ammonia. J. W. McAmis. *Journal American Water Works Association*, vol. 17, No. 3, March, 1927, pp. 341–350. (Abstract by M. S. Foreman.)

The water supply of Greenville, Tenn., is obtained from a limestone spring which issues from under a limestone ledge near the center of the city. It seems quite evident that most of the water flows underground for a considerable distance, and in so doing is subjected to almost every kind of contamination. In 1912, when chlorination was resorted to, obnoxious tastes and odors appeared. The objectionable taste was similar to the iodoform taste that is noted in Ohio River waters. Consumers objected so strenuously to the taste that a close study was made. Blue-green algæ was eliminated as a factor in taste production. Covers were built for both springs and standpipes, and copper sulphate was added; still the taste persisted. Tests for phenol gave very doubtful reactions and, consequently, were discontinued. Since the taste practically disappeared in the spring and winter, it was thought that high temperatures emphasized the taste. Due to the system of operation of the plant this could not be confirmed. Double chlorination entirely eliminated the taste in laboratory samples, but it failed when applied on plant scale. Prechlorination likewise failed to eliminate the odor.

Sir Alexander Houston, director of the Metropolitan Water Board, described the successful work of Adams, in which ammonia was used. This treatment was begun in Greenville in 1926 and has been highly satisfactory from the start. The ammonia is applied by first preparing a known strength in a solution tank and adding it just ahead of the coagulating chemicals. Houston states that in the laboratory a dose of 0.2 p. p. m. of ammonia as nitrogen appears to be sufficient in all cases. The ammonia treatment, besides being very successful in eliminating phenolic tastes, is very inexpensive. The cost, at prices now quoted on ammonia, would be $0.60 per million gallons of water treated.

Simple Method for Estimating the Available Chlorine in Bleaching Powder. B. B. Brahmachari. *The Indian Medical Gazette*, vol. 62, No. 5, May, 1927, pp. 251–252. (Abstract by E. J. Theriault.)

A field method for the estimation of available chlorine in hypochlorites is described. An emulsion of the bleaching powder is prepared such that 1 c. c. = 1 mg. of bleaching powder. Varying amounts of this emulsion (0.3 c. c., 0.4 c. c., etc.) are then added to a series of tubes containing some water and a constant amount (1 c. c.) of arsenious oxide reagent (1 c. c. = 1.39 mg. As_2O_3 = 1 mg. Cl_2).

"Excess of available chlorine over that used up in the reactions for oxidation of the arsenious acid will be shown by the formation of blue iodide of starch. The result may be interpreted from the following table:

Least quantity of bleaching powder emulsion giving a blue color	Available chlorine in the sample	
	Less than—	More than—
C. c.	*Per cent*	*Per cent*
3	----------	33
4	33	25
5	25	20
6	20	16½
8	16½	12½
10	12	10

"If not blue even with 10 c. c. of the emulsion, the powder has less than 10 per cent of available chlorine. If the available chlorine is 25 per cent or over, the bleaching powder is of satisfactory quality."

Practical Swimming Pool Sanitation Control. W. H. Cary, jr. *The Nation's Health,* vol. 9, No. 5, May 15, 1927, pp. 16-20. (Abstract by L. M. Fisher.)

Detroit's 37 pools represent all types, from old fill and draw to modernly equipped pools with recirculating pumps, hair strainers, sand filters, and sterilization. Only two are outdoor pools.

Inspections are made every second and third day and water samples taken. Bacterial standards are: (1) A median monthly total count of not over 2,000 per c. c.; (2) not over 50 per cent of samples in any month shall show presence of *B. coli;* (3) not over 20 per cent of samples in a given month shall show a colon count of over 10 per 100 c. c.

The publication of the standing of the pools has been an incentive to meet the requirements.

It does not require modern equipment to stand well upon the list as to sanitation. The personnel has much to do with results obtained. Good cooperation is obtained from those in charge of the swimming pools.

A Search for Pathogenic Bacteria in Swimming Pools. William Royal Stokes. *American Journal of Public Health,* vol. 17, No. 4, April, 1927, p. 334. (Abstract by Chester Cohen.)

The possibility of a swimming pool acting as a medium for the transmission of such diseases as typhoid fever, gonorrhea, syphilis, ringworm, dysentery, colds, conjunctivitis, and boils, is mentioned. It is the opinion of a number of physicians that the swimming pool may also serve to transmit various eye, ear, nose, throat, and skin infections, in addition to such diseases as influenza, tuberculosis, lobar pneumonia, and rheumatism. The two principal factors considered in the transmission of diseases are the polluted water and certain articles of pool equipment (suits, towels, etc.), and the lessening of resistance through prolonged chilling of the body, diving, and other enervating influences.

Few investigators have been able to isolate pollutional forms from swimming pool water. The author has recorded the results of his laboratory examinations of samples of water from 14 swimming pools—an attempt to culture, on blood agar plates and eosinate of methylene blue agar plates, pathogenic bacteria in the pool water. These tests cover a period of months and include both indoor and outdoor swimming pools. Although 500 colonies were studied in pure culture, the only pathogenic organisms obtained were *Staphylococcus albus.* Although the investigation does not strengthen the theory of the transmission of infectious diseases by means of pathogenic bacteria in the swimming pool, not enough tests have been made to render such a theory untenable.

Swimming Bath Conjunctivitis. Charles A. Bahn. *New Orleans Medical and Surgical Journal,* vol. 79, No. 8, February, 1927, pp. 586–590. (Abstract by C. T. Butterfield.)

The history of 36 cases of conjunctivitis treated by the author and his associate is reviewed. The author believes that these infections were contracted in swimming pools and that the infectious material is probably either human epithelium or urine with the attendant bacteria. The bacteriological studies made were uniformly negative. Two methods of treatment of the disease, with the results, are discussed. An outline of the suggestions for the sanitary control of pools is given as follows: (1) Require thorough preliminary scrub and shower; (2) instruct against overcrowding and urinating while bathing; (3) provide a minimum of 15 gallons of water per bather; (4) use chlorine at rate of 1 mg. per liter; (5) scrub tanks once or twice daily.

DEATHS DURING WEEK ENDED SEPTEMBER 10, 1927

Summary of information received by telegraph from industrial insurance companies for week ended September 10, 1927, and corresponding week of 1926. (From the Weekly Health Index, September 14, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Sept. 10, 1927	Corresponding week 1926
Policies in force	66, 236, 685	65, 263, 862
Number of death claims	9, 287	10, 135
Death claims per 1,000 policies in force, annual rate	7. 3	8. 1

Deaths from all causes in certain large cities of the United States during the week ended September 10, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, September 14, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Sept. 10, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Sept. 10, 1927 [2]
	Total deaths	Death rate [1]		Week ended Sept. 10, 1927	Corresponding week 1926	
Total (66 cities)	6, 389	11 3	[3] 10 2	725	[3] 764	[4] 58
Akron	34			1	11	11
Albany [5]	41	17 8	15 3	4	2	83
Atlanta	67			8	13	
White	33			5	8	
Colored	24	(6)		3	5	
Baltimore [5]	188	12. 0	12 2	16	24	49
White	142		10. 8	12	17	46
Colored	46	(6)	20 2	4	7	62
Birmingham	71	17. 2	14. 6	6	4	
White	30		11. 4	2	3	
Colored	41	(6)	19 5	4	1	
Boston	208	13. 7	10. 8	31	30	87
Bridgeport	26			1	2	19
Buffalo	131	12 4	11. 9	15	24	63
Cambridge	22	9 3	5. 6	6	1	107
Camden	25	9 8	11 9	3	7	52
Canton	21	9 7	7. 6	1	6	24
Chicago [5]	702	11 8	8. 7	79	85	68
Cincinnati	154	19. 5	14. 8	26	29	162
Cleveland	173	9. 2	7. 8	19	23	50
Columbus	59	10 6	11. 5	4	9	37
Dallas	48	12 0	11. 0	8	7	
White	34		9. 2	7	4	
Colored	14	(6)	23. 2	1	3	
Dayton	44	12 7	13. 6	7	6	115
Denver	91	16. 4	12. 8	13	6	
Des Moines	27	9. 4	7. 9	1	4	17
Detroit	260	10. 2	10. 6	46	43	73
Duluth	17	7. 7	6. 0	1	3	22
El Paso	30	13. 7	12 9	12	5	
Erie	32			2	2	39
Fall River [5]	24	9. 4	13. 9	3	2	53
Flint	25	9. 1	6. 9	4	5	65
Fort Worth	31	9. 9	10. 5	6	5	
White	21		8. 9	3	3	
Colored	10	(6)	22. 0	3	2	
Grand Rapids	32	10. 5	8. 7	5	4	73
Houston	41			7	7	
White	26			6	6	
Colored	15	(6)		1	1	
Indianapolis	86	12. 0	8. 0	7	6	55
White	73		7. 3	5	4	45
Colored	13	(6)	13. 0	2	2	122
Jersey City	50	8. 1	7. 4	6	9	45
Kansas City, Kans	26	11. 6	10. 3	2	2	39
White	20		6. 5	0	2	0
Colored	6	(6)	28. 0	2	0	304

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 65 cities.
[4] Data for 61 cities.
[5] Deaths for week ended Friday, Sept. 9, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25, Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

Deaths from all causes in certain large cities of the United States during the week ended September 10, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926—Continued

City	Week ended Sept. 10, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Sept. 10, 1927
	Total deaths	Death rate		Week ended Sept. 10, 1927	Corresponding week 1926	
Kansas City, Mo.	77	10.5	9.0	6	8	
Knoxville	29	14.8		3		
White	20			2		
Colored	9	(6)		1		
Los Angeles	175			9	11	28
Louisville	83	13.5	12.7	5	6	43
White	64		10.5	5	4	49
Colored	19	(6)	25.5	0	2	0
Lowell	26	12.3	9.9	3	5	58
Lynn	18	8.9	9.5	1	1	26
Memphis	60	17.5	18.3	3	6	
White	30		14.6	2	3	
Colored	30	(6)	24.8	1	3	
Milwaukee	135	13.3	10.4	13	15	61
Minneapolis	75	8.8	7.1	9	3	51
Nashville [5]	53	20.0	17.5	7	9	
White	33		18.1	6	9	
Colored	20	(6)	16.0	1	0	
New Bedford	23	10.0	9.6	3	2	52
New Haven	23	6.5	7.2	2	1	28
New Orleans	139	17.1	15.9	15	15	
White	80		11.9	7	7	
Colored	59	(6)	27.3	8	8	
New York	1,174	10.3	10.1	129	146	53
Bronx Borough	144	8.1	8.5	15	11	48
Brooklyn Borough	421	9.7	9.1	45	71	47
Manhattan Borough	465	13.4	13.4	60	56	70
Queens Borough	107	6.9	5.5	7	7	30
Richmond Borough	37	13.1	15.7	2	1	37
Newark, N. J.	102	11.4	7.7	10	7	50
Oakland	41	8.0	8.2	8	5	94
Oklahoma City	39			3	6	
Omaha	56	13.3	11.1	6	3	67
Paterson	30	10.9	9.1	3	1	53
Philadelphia	392	10.0	10.3	43	48	57
Pittsburgh	125	10.1	9.5	22	20	77
Portland, Oreg.	54			3	5	32
Providence	43	8.0	8.7	3	5	25
Richmond	54	14.7	12.4	9	8	119
White	26		9.3	2	2	40
Colored	28	(6)	19.9	7	6	266
Rochester	65	10.5	9.4	8	8	67
St. Louis	178	11.1	10.4	15	16	
St. Paul	47	9.8	9.9	4	3	36
Salt Lake City [5]	26	10.0	12.9	3	6	46
San Antonio	36	8.9	14.2	2	11	
San Diego	31	14.1	13.3	1	0	21
San Francisco	140	12.7	11.3	2	5	12
Schenectady	16	9.0	8.4	3	3	90
Seattle	64			2	5	21
Somerville	26	13.3	6.3	6	2	217
Spokane	42	20.1	13.4	1	2	25
Springfield, Mass.	35	12.4	9.7	5	4	77
Syracuse	41	10.9	8.7	1	6	13
Toledo	73	12.5	12.7	9	8	87
Trenton	36	13.7	10.1	10	2	174
Washington, D. C.	114	11.0	9.7	13	12	75
White	77		8.5	8	7	68
Colored	37	(6)	13.3	5	5	92
Waterbury	17			1	1	24
Wilmington, Del.	26	10.8	8.0	0	2	0
Worcester	37	9.9	11.3	3	4	36
Yonkers	24	10.5	8.1	1	1	23
Youngstown	52	16.0	9.5	4	4	56

[5] Deaths for week ended Friday, Sept. 9, 1927.

[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended September 17, 1927

DIPHTHERIA

	Cases
Alabama	64
Arizona	3
Arkansas	5
California	87
Colorado	26
Connecticut	14
Florida	21
Georgia	45
Idaho	1
Illinois	55
Indiana	11
Iowa [1]	23
Kansas	29
Louisiana	21
Maine	3
Maryland [1]	35
Massachusetts	62
Michigan	45
Minnesota	40
Mississippi	29
Missouri	52
Montana	3
Nebraska	4
New Jersey	52
New Mexico	8
New York [2]	61
North Carolina	101
Oklahoma [3]	57
Oregon	2
Pennsylvania	120
Rhode Island	5
South Carolina	53
Tennessee	19
Texas	46
Utah [1]	5
Vermont	1
Washington	10

[1] Week ended Friday.
[2] Exclusive of New York City
[3] Exclusive of Oklahoma City and Tulsa.

DIPHTHERIA—continued

	Cases
West Virginia	19
Wisconsin	23
Wyoming	2

INFLUENZA

	Cases
Alabama	16
Arkansas	9
California	10
Connecticut	1
Georgia	17
Illinois	7
Indiana	8
Kansas	1
Louisiana	4
Maryland [1]	5
Massachusetts	9
Missouri	2
New Jersey	2
Oklahoma [3]	12
Oregon	14
South Carolina	156
Tennessee	9
Texas	2
Utah [1]	2
West Virginia	2
Wisconsin	43

MEASLES

	Cases
Alabama	22
Arizona	4
Arkansas	5
California	31
Colorado	1
Connecticut	4
Florida	4
Georgia	2
Idaho	3
Illinois	16

[1] Week ended Friday.
[3] Exclusive of Oklahoma City and Tulsa.

MEASLES—continued	Cases
Indiana	2
Iowa [1]	6
Kansas	19
Louisiana	8
Maine	3
Maryland [1]	3
Massachusetts	29
Michigan	7
Minnesota	5
Missouri	8
Montana	3
Nebraska	1
New Jersey	3
New Mexico	4
New York [2]	12
North Carolina	150
Oklahoma [3]	5
Oregon	13
Pennsylvania	51
South Carolina	56
South Dakota	2
Tennessee	22
Texas	2
Utah [1]	1
Washington	14
West Virginia	12
Wisconsin	81

MENINGOCOCCUS MENINGITIS

Arizona	4
California	4
Florida	1
Illinois	4
Louisiana	1
Maryland [1]	2
Massachusetts	2
Minnesota	1
Missouri	2
Montana	3
New Jersey	1
New Mexico	1
North Carolina	1
Oklahoma [3]	2
Oregon	1
Pennsylvania	2
Tennessee	2
Washington	3
Wisconsin	2

POLIOMYELITIS

Alabama	1
Arizona	7
Arkansas	3
California	66
Colorado	2
Connecticut	19
Florida	1
Illinois	36
Indiana	4
Iowa [1]	5
Kansas	10
Louisiana	1
Maine	10
Massachusetts	103

[1] Week ended Friday.

[2] Exclusive of New York City.

[3] Exclusive of Oklahoma City and Tulsa.

POLIOMYELITIS—continued	Cases
Michigan	18
Minnesota	11
Missouri	17
Nebraska	4
New Jersey	39
New Mexico	11
New York [2]	39
North Carolina	2
Ohio	89
Oklahoma [3]	8
Oregon	21
Pennsylvania	48
Rhode Island	4
South Carolina	2
South Dakota	5
Tennessee	2
Texas	16
Utah [1]	6
Washington	15
West Virginia	13
Wisconsin	15

SCARLET FEVER

Alabama	23
Arkansas	9
California	77
Colorado	10
Connecticut	16
Delaware	3
Florida	8
Georgia	28
Idaho	2
Illinois	97
Indiana	27
Iowa [1]	8
Kansas	21
Louisiana	2
Maine	10
Maryland [1]	14
Massachusetts	102
Michigan	75
Minnesota	64
Mississippi	16
Missouri	23
Montana	3
Nebraska	13
New Jersey	48
New Mexico	7
New York [2]	62
North Carolina	73
Oklahoma [3]	22
Oregon	7
Pennsylvania	118
Rhode Island	17
South Carolina	25
South Dakota	7
Tennessee	34
Texas	31
Utah [1]	7
Vermont	4
Washington	10
West Virginia	47
Wisconsin	55
Wyoming	2

[1] Week ended Friday.

[2] Exclusive of New York City.

[3] Exclusive of Oklahoma City and Tulsa.

SMALLPOX

	Cases
Alabama	2
California	7
Florida	11
Idaho	4
Illinois	16
Indiana	12
Iowa [1]	6
Kansas	8
Louisiana	3
Michigan	16
Mississippi	3
Missouri	11
Montana	1
Nebraska	7
New Jersey	1
New Mexico	2
New York [2]	[4] 18
North Carolina	3
Oklahoma [3]	34
Oregon	15
South Carolina	2
Tennessee	2
Utah [1]	2
Washington	13
West Virginia	11
Wisconsin	8
Wyoming	1

TYPHOID FEVER

	Cases
Alabama	49
Arizona	14
Arkansas	26
California	13
Colorado	16
Connecticut	5

[1] Week ended Friday
[2] Exclusive of New York City
[3] Exclusive of Oklahoma City and Tulsa.
[4] Includes delayed reports.

TYPHOID FEVER—continued

	Cases
Delaware	4
Florida	11
Georgia	30
Idaho	2
Illinois	73
Indiana	37
Iowa [1]	3
Kansas	25
Louisiana	26
Maine	5
Maryland [1]	23
Massachusetts	24
Michigan	22
Minnesota	7
Mississippi	9
Missouri	32
Montana	2
Nebraska	9
New Jersey	21
New Mexico	10
New York [2]	38
North Carolina	50
Oklahoma [3]	101
Oregon	4
Pennsylvania	43
Rhode Island	3
South Carolina	86
South Dakota	5
Tennessee	82
Texas	33
Utah [1]	3
Washington	4
West Virginia	56
Wisconsin	2

[1] Week ended Friday.
[2] Exclusive of New York City.
[3] Exclusive of Oklahome City and Tulsa.

Reports for Week Ended September 10, 1927

DIPHTHERIA

	Cases
District of Columbia	6
North Dakota	2

MEASLES

North Dakota	1

MENINGOCOCCUS MENINGITIS

North Dakota	1

POLIOMYELITIS

North Dakota	3

SCARLET FEVER

	Cases
District of Columbia	8
North Dakota	16

SMALLPOX

District of Columbia	1
North Dakota	3

TYPHOID FEVER

District of Columbia	3
North Dakota	1

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
June, 1927										
Colorado	1	106			546		1	386	15	19
July, 1927										
Colorado	0	63			152		2	152	19	26
South Dakota	0	18	2	1	41		0	58	34	2
August, 1927										
Arizona	0	4			10		5	10	0	18
Florida	3	49	23	38	28	6	5	13	13	63
Michigan	0	212	4	1	104	1	31	296	59	87
North Dakota	1	15			18		0	65	13	3

June, 1927

	Cases
Colorado.	
Chicken pox	96
German measles	37
Impetigo contagiosa	1
Mumps	15
Rocky Mountain spotted or tick fever	3
Septic sore throat	1
Whooping cough	47

July, 1927

	Cases
Chicken pox.	
Colorado	67
South Dakota	14
German measles	
Colorado	8
Impetigo contagiosa.	
Colorado	2
Mumps.	
Colorado	19
South Dakota	15
Septic sore throat:	
Colorado	3
Trachoma	
Colorado	2
Whooping cough:	
Colorado	74
South Dakota	52

August, 1927

	Cases
Chicken pox:	
Florida	9
Michigan	147
North Dakota	2
Dysentery:	
Florida	15
German measles:	
North Dakota	6
Hookworm disease:	
Florida	59
Leprosy:	
Michigan	1
Lethargic encephalitis	
Florida	3
Michigan	4
Mumps	
Arizona	1
Florida	15
Michigan	99
North Dakota	4
Paratyphoid fever:	
Florida	2
Rabies in man	
Michigan	1
Septic sore throat.	
Michigan	4
Tetanus:	
Florida	2
Trachoma:	
Arizona	1
Florida	1
North Dakota	1
Typhus fever	
Florida	19
Whooping cough:	
Arizona	1
Florida	15
Michigan	673
North Dakota	30

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 98 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,670,000. The estimated population of the 93 cities reporting deaths is more than 30,080,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended September 3, 1927, and September 4, 1926

	1927	1926	Estimated expectancy		1927	1926	Estimated expectancy
Cases reported				*Cases reported*—Contd.			
Diphtheria.				Typhoid fever:			
42 States	1,224	967	--------	42 States	1,233	1,474	--------
98 cities	499	426	523	98 cities	189	233	226
Measles:				*Deaths reported*			
41 States	673	781	--------				
98 cities	122	148	--------				
Poliomyelitis.				Influenza and pneumonia:			
42 States	470	130	--------				
Scarlet fever							
42 States	1,046	901	--------	93 cities	352	305	--------
98 cities	340	296	268	Smallpox:			
Smallpox:				93 cities	1	0	--------
42 States	127	120	--------	St Joseph	1	0	--------
98 cities	23	11	23				

City reports for week ended September 3, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during non-epidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine									
Portland	75,333	0	0	0	0	0	1	0	2
New Hampshire:									
Concord	22,546	0	0	0	0	0	0	0	1
Manchester	83,097	0	1	0	0	0	0	0	0
Vermont									
Barre	10,008	0	0	0	0	0	0	0	0
Burlington	24,089	0	0	0	0	0	0	0	0
Massachusetts									
Boston	779,620	3	27	15	1	0	20	3	8
Fall River	128,993	1	1	1	0	0	0	0	1
Springfield	142,065	0	1	5	0	0	0	0	0
Worcester	190,757	0	3	3	0	0	1	0	2
Rhode Island:									
Pawtucket	69,760	0	1	0	0	0	0	0	1
Providence	267,918	0	3	5	0	0	1	0	2
Connecticut									
Bridgeport	(1)	0	4	3	0	0	0	0	0
Hartford	160,197	1	3	3	0	1	0	0	2
New Haven	178,927	0	2	3	0	0	2	0	2
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	0	12	18	--------	0	0	2	7
New York	5,873,356	14	82	91	6	2	9	12	81
Rochester	316,786	0	5	5	--------	1	2	4	3
Syracuse	182,003	2	3	1	--------	0	6	2	3
New Jersey:									
Camden	128,642	0	1	5	0	0	0	2	1
Newark	452,513	4	6	3	1	0	0	2	2
Trenton	132,020	0	2	1	1	0	0	0	1
Pennsylvania:									
Philadelphia	1,979,364	6	31	21	--------	3	1	10	23
Pittsburgh	631,563	1	11	11	--------	0	17	2	25
Reading	112,707	0	2	1	--------	0	1	0	0

[1] No estimate made.

City reports for week ended September 3, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	2	5	2	0	2	1	0	3
Cleveland	936,485	16	21	36	0	0	9	13	7
Columbus	279,836	0	2	5	0	0	0	0	4
Toledo	287,380	3	6	0	0	0	0	1	1
Indiana:									
Fort Wayne	97,846	0	1	1	0	0	0	0	0
Indianapolis	358,819	0	4	3	0	0	0	2	5
South Bend	80,091	0	1	0	0	0	0	0	0
Terre Haute	71,071	0	0	0	0	0	0	0	1
Illinois:									
Chicago	2,995,239	25	47	58	2	3	3	14	33
Springfield	63,923	0	1	0	1	1	0	2	2
Michigan:									
Detroit	1,245,824	3	35	13	0	1	1	8	15
Flint	130,316	1	5	1	0	0	0	0	3
Grand Rapids	153,698	0	2	1	0	0	0	0	0
Wisconsin:									
Kenosha	50,891	0	0	0	0	0	1	1	0
Madison	46,385	0	1	1	0	0	4	0	0
Milwaukee	509,192	5	8	8	0	0	1	4	2
Racine	67,707	0	0	3	0	0	0	0	1
Superior	39,671	2	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	0	0	0	0	0	0	0	0
Minneapolis	425,435	5	16	9	0	1	2	0	1
St. Paul	246,001	0	12	2	0	0	0	0	3
Iowa:									
Davenport	52,469	0	0	3	0		0	0	
Sioux City	76,411	0	1	0	0		2	0	
Waterloo	36,771	0	1	0	0		0	0	
Missouri:									
Kansas City	367,481	0	3	1	0	1	0	1	3
St. Joseph	78,342	0	1	0	0	0	1	0	2
St. Louis	821,543	1	20	19	0	0	3	3	
North Dakota:									
Fargo	26,403	0	0	0	0	0	0	0	0
Grand Forks	14,811	1	0	0	0		0	0	
South Dakota:									
Aberdeen	15,036	1	1	0	0		0	0	
Sioux Falls	30,127	0	0	0	0		0	0	
Nebraska:									
Lincoln	60,941	0	0	0	0	0	1	5	1
Omaha	211,768	0	8	0	0	0	0	1	1
Kansas:									
Topeka	55,411	0	1	0	0	0	0	0	1
Wichita	88,367	0	1	4	0	0	0	2	0
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	0	1	2	0	0	0	0	0
Maryland:									
Baltimore	796,296	4	13	24	2	1	2	1	10
Cumberland	33,741	0	0	0	0	0	0	0	0
Frederick	12,035	0	0	0	0	0	0	0	0
District of Columbia:									
Washington	497,906	5	4	11	1	1	0	0	7
Virginia:									
Lynchburg	30,395	0	0	0	0	0	0	0	1
Norfolk	(1)	0	1	1	0	0	0	0	1
Richmond	186,403	1	9	2	0	1	0	0	1
Roanoke	58,208	0	3	1	0	0	0	0	0
West Virginia:									
Charleston	49,019	1	1	1	1	0	0	0	0
Wheeling	56,208	0	1	0	0	0	0	0	1
North Carolina:									
Raleigh	30,371	0	1	1	0	0	1	0	0
Wilmington	37,061	0	1	0	0	1	0	0	1
Winston-Salem	69,031	0	2	1	0	0	3	4	1
South Carolina:									
Charleston	73,125	0	1	0	29	0	0	0	0
Columbia	41,225	0	1	2	0		1	0	1
Greenville	27,311		1						

(1) No estimate made.

City reports for week ended September 3, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
SOUTH ATLANTIC—con.									
Georgia:									
Atlanta	(1)	0	4	2	11	0	1	1	0
Brunswick	16,809	0	0	0	0	0	0	0	0
Savannah	93,134	0	1	0	0	0	0	0	0
Florida:									
Miami	69,754	0		0	3	0	1	0	3
St. Petersburg	26,847		0			0			0
Tampa	94,743	0	1	1	0	0	2	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	2	0	1	0	0	1	0	0
Louisville	305,935	0	3	1	0	0	1	0	2
Tennessee:									
Memphis	174,533	0	3	1	0	0	0	0	0
Nashville	136,220	0	1	2	0	1	0	0	2
Alabama:									
Birmingham	205,670	0	4	0	1	0	0	0	5
Mobile	65,955	0	1	2	2	0	0	0	0
Montgomery	46,481	1	1	3	0	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	0	0	0	0		0	0	
Little Rock	74,216	0	0	1	0	0	5	0	
Louisiana:									
New Orleans	414,493	0	6	11	5	1	2	0	7
Shreveport	57,857	0	0	2	0	0	2	0	2
Oklahoma:									
Oklahoma City	(1)	0	1	2	0	0	0	0	2
Tulsa	124,478	0		0	0		0	0	
Texas:									
Dallas	194,450	0	3	10	2	2	1	0	2
Galveston	48,375	0	0	3	0	0	0	0	0
Houston	164,954	0	2	4	0	0	0	1	3
San Antonio	198,069	0	1	8	0	0	0	0	3
MOUNTAIN									
Montana:									
Billings	17,971	0	0	0	0	0	0	0	0
Great Falls	29,883	2	0	0	0	0	0	0	0
Helena	12,037	0	0	0	0	0	0	0	0
Missoula	12,668	0	0	0	0	0	0	1	0
Idaho:									
Boise	23,042	0	0	1	0	0	0	2	0
Colorado:									
Denver	280,911	3	9	0		2	1	1	4
Pueblo	43,787	0	3	1	0	0	0	0	1
New Mexico:									
Albuquerque	21,000	0	1	0	0	0	0	0	1
Utah:									
Salt Lake City	130,948	6	2	4	0	0	0	0	1
Nevada:									
Reno	12,665	0	0	1	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	(1)	6	3	2	0		6	3	
Spokane	108,897	6	2	2	0		0	0	
Tacoma	104,455	0	2	1	0	0	0	1	0
Oregon:									
Portland	282,383	0	4	7	0	0	3	1	3
California:									
Los Angeles	(1)	9	22	16	4	0	3	1	12
Sacramento	72,260	1	2	3	0	0	0	0	0
San Francisco	557,530	6	14	4	0	0	7	4	4

[1] No estimate made.

City reports for week ended September 3, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
NEW ENGLAND											
Maine:											
Portland	0	1	0	0	0	2	1	1	0	9	19
New Hampshire:											
Concord	0	1	0	0	0	0	0	1	0	0	12
Manchester	1	1	0	0	0	1	0	0	0	0	18
Vermont:											
Barre	0	0	0	0	0	0	0	0	0	0	1
Burlington	0	0	0	0	0	0	0	0	0	0	3
Massachusetts:											
Boston	14	14	0	0	0	14	4	1	0	10	206
Fall River	1	0	0	0	0	1	2	0	0	0	25
Springfield	1	2	0	0	0	1	0	0	0	2	15
Worcester	2	2	0	0	0	4	0	3	0	5	49
Rhode Island:											
Pawtucket	0	0	0	0	0	0	0	0	0	0	19
Providence	2	5	0	0	0	3	1	2	0	2	35
Connecticut:											
Bridgeport	1	1	0	0	0	0	0	1	0	0	24
Hartford	1	0	0	0	0	0	1	0	0	10	33
New Haven	2	0	0	0	0	3	4	0	0	10	35
MIDDLE ATLANTIC											
New York:											
Buffalo	4	17	0	0	0	7	3	0	2	11	122
New York	24	29	0	0	0	[1] 71	45	39	5	126	1,104
Rochester	2	1	0	0	0	6	1	1	0	0	73
Syracuse	2	5	0	0	0	5	1	0	0	3	52
New Jersey:											
Camden	0	0	1	0	0	2	1	1	0	2	21
Newark	4	1	0	0	0	6	2	3	0	58	89
Trenton	0	2	0	0	0	2	1	1	0	4	18
Pennsylvania:											
Philadelphia	19	18	0	0	0	39	14	8	1	23	413
Pittsburgh	9	4	0	0	0	9	3	3	0	24	173
Reading	0	0	0	0	0	1	0	0	1	6	28
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	4	7	1	0	0	8	2	8	1	5	103
Cleveland	10	7	0	0	0	17	5	0	0	28	156
Columbus	2	13	1	0	0	7	1	0	0	17	66
Toledo	4	2	0	0	0	5	3	5	0	11	75
Indiana:											
Fort Wayne	1	0	0	0	0	1	2	1	0	5	19
Indianapolis	2	3	0	1	0	4	2	0	0	2	87
South Bend	1	1	0	0	0	0	0	0	0	0	9
Terre Haute	0	0	0	0	0	1	0	0	0	1	13
Illinois:											
Chicago	25	28	1	1	0	41	8	7	3	154	594
Springfield	1	0	0	0	0	0	0	0	0	0	23
Michigan:											
Detroit	23	35	1	9	0	23	6	7	0	86	224
Flint	3	12	1	0	0	0	2	0	0	1	23
Grand Rapids	3	5	0	0	0	2	1	0	0	6	21
Wisconsin:											
Kenosha	1	4	0	0	0	0	0	0	0	0	5
Madison	1	0	1	0	0	0	0	0	0	0	4
Milwaukee	8	4	0	0	0	7	1	0	0	37	81
Racine	1	1	0	0	0	0	0	0	0	5	10
Superior	1	0	1	0	0	0	0	0	0	0	12
WEST NORTH CENTRAL											
Minnesota:											
Duluth	4	5	0	0	0	0	0	0	0	2	18
Minneapolis	12	6	1	0	0	5	2	1	0	1	66
St. Paul	5	1	1	0	0	4	1	0	0	6	56
Iowa:											
Davenport	0	1	0	0			0	0		0	
Sioux City	0	0	0	0			0	0		0	
Waterloo	0	0	0	0			0	0		0	

[1] Pulmonary tuberculosis only.

City reports for week ended September 3, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST NORTH CENTRAL—continued											
Missouri:											
Kansas City	2	0	0	1	0	6	3	0	0	6	75
St. Joseph	1	0	0	0	1	2	0	0	0	2	22
St. Louis	7	15	1	0	0	16	7	1	0	18	187
North Dakota:											
Fargo	0	1	0	0	0	0	0	0	0	0	5
Grand Forks	1	3	0	0	-------	------	0	0	-------	0	-------
South Dakota.											
Aberdeen	1	0	0	0	-------	------	0	0	-------	0	-------
Sioux Falls	0	0	0	0	-------	------	0	0	-------	0	-------
Nebraska:											
Lincoln	0	1	1	0	0	0	0	0	0	1	19
Omaha	1	0	0	0	0	1	1	1	1	0	32
Kansas											
Topeka	1	0	0	0	0	0	1	0	0	9	10
Wichita	1	7	1	0	0	0	2	2	0	15	34
SOUTH ATLANTIC											
Delaware:											
Wilmington	0	0	0	0	0	0	1	0	0	2	17
Maryland:											
Baltimore	6	2	0	0	0	13	11	10	0	23	169
Cumberland	0	0	0	0	0	0	1	0	0	0	6
Frederick	0	0	0	0	0	0	1	0	0	0	3
Dis. of Columbia:											
Washington	3	13	0	0	0	12	4	5	1	7	122
Virginia											
Lynchburg	0	0	0	0	0	0	1	1	0	1	14
Norfolk	0	0	0	0	0	3	2	1	0	1	-------
Richmond	3	4	0	0	0	2	2	5	0	5	52
Roanoke	1	5	0	0	0	2	2	0	0	0	19
West Virginia											
Charleston	1	3	0	0	0	1	2	1	2	0	20
Wheeling	2	0	0	0	0	1	1	2	0	1	26
North Carolina.											
Raleigh	0	0	0	0	0	1	0	0	0	1	15
Wilmington	0	0	0	0	0	0	0	0	0	0	9
Winston-Salem	1	0	0	0	0	1	2	0	0	12	13
South Carolina.											
Charleston	1	0	0	0	0	3	3	5	0	0	23
Columbia	0	0	0	0	-------	------	2	1	-------	4	9
Greenville	0	-------	1	-------	-------	------	0	-------	-------	-------	-------
Georgia:											
Atlanta	4	3	1	0	0	3	5	5	1	0	51
Brunswick	0	0	0	0	0	0	1	1	0	0	3
Savannah	0	2	0	0	0	2	2	0	0	1	29
Florida											
Miami	-------	0	-------	0	0	2	-------	0	0	3	25
St. Petersburg	0	-------	0	-------	0	1	0	-------	0	-------	6
Tampa	0	1	0	0	0	1	1	2	0	0	21
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0	1	0	0	0	0	1	0	0	0	17
Louisville	1	5	0	0	0	1	5	1	1	3	55
Tennessee:											
Memphis	1	4	0	0	0	8	6	8	0	0	66
Nashville	2	2	0	0	0	2	7	5	3	2	49
Alabama:											
Birmingham	3	1	0	0	0	3	6	18	3	4	58
Mobile	0	2	0	0	0	1	1	0	0	0	22
Montgomery	0	0	0	0	0	0	1	4	0	1	-------
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	0	0	0	-------	------	0	0	-------	0	-------
Little Rock	0	0	0	0	0	5	2	2	0	0	-------
Louisiana:											
New Orleans	1	0	0	0	0	13	5	3	1	1	133
Shreveport	0	1	0	0	0	1	2	1	0	0	17

City reports for week ended September 3, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
WEST SOUTH CENTRAL—continued											
Oklahoma.											
Oklahoma City	1	3	0	1	0	2	2	0	1	1	27
Tulsa	------	0	------	0	------	------	------	1	------	1	------
Texas:											
Dallas	1	7	1	0	0	2	3	3	0	5	37
Galveston	0	2	0	0	0	0	0	0	0	0	13
Houston	0	2	0	0	0	4	1	2	1	2	65
San Antonio	1	2	0	0	0	9	1	2	1	0	60
MOUNTAIN											
Montana.											
Billings	0	2	1	0	0	0	0	1	0	8	2
Great Falls	0	0	0	0	0	0	1	0	0	0	10
Helena	0	0	0	0	0	0	0	0	0	0	3
Missoula	0	1	0	0	0	0	0	0	0	0	2
Idaho:											
Boise	0	0	1	0	0	0	0	0	0	0	9
Colorado											
Denver	3	2	1	2	0	11	3	0	0	4	78
Pueblo	0	1	0	0	0	0	0	0	0	1	16
New Mexico:											
Albuquerque	0	1	0	0	0	6	0	0	0	0	10
Utah											
Salt Lake City	1	1	0	2	0	1	1	5	0	13	36
Nevada											
Reno	0	0	0	0	0	0	0	0	0	0	4
PACIFIC											
Washington											
Seattle	4	5	1	0	------	------	2	2	------	10	------
Spokane	4	0	1	6	------	------	0	0	------	0	------
Tacoma	2	0	2	0	0	0	0	0	0	0	23
Oregon											
Portland	3	1	4	5	0	3	1	0	0	1	53
California:											
Los Angeles	7	4	2	0	0	24	4	0	0	7	196
Sacramento	0	1	0	1	0	0	0	1	0	0	15
San Francisco	6	3	1	0	0	6	1	0	0	14	131

Division, State, and city	Meningococcus meningitis: Cases	Meningococcus meningitis: Deaths	Lethargic encephalitis: Cases	Lethargic encephalitis: Deaths	Pellagra: Cases	Pellagra: Deaths	Poliomyelitis (infantile paralysis): Cases, estimated expectancy	Poliomyelitis (infantile paralysis): Cases	Poliomyelitis (infantile paralysis): Deaths
NEW ENGLAND									
Maine:									
Portland	0	0	0	0	0	0	0	5	1
New Hampshire:									
Manchester	0	0	0	0	0	0	0	1	0
Massachusetts:									
Boston	1	0	0	1	0	0	2	18	4
Springfield	0	0	0	0	0	0	1	1	0
Worcester	0	0	0	0	0	0	0	4	0
Rhode Island.									
Providence	0	0	0	0	0	0	0	0	1
Connecticut:									
Hartford	0	0	0	0	0	0	0	1	0

City reports for week ended September 3, 1927—**Continued**

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
MIDDLE ATLANTIC									
New York:									
New York	4	1	2	2	0	0	8	66	5
New Jersey:									
Newark	0	0	0	0	0	0	1	1	1
Trenton	0	0	0	0	0	0	0	1	0
Pennsylvania.									
Philadelphia	1	0	2	0	0	0	0	5	1
Pittsburgh	1	1	0	0	0	0	0	4	0
Reading	0	0	0	0	0	0	0	1	0
EAST NORTH CENTRAL									
Ohio.									
Cincinnati	0	0	0	0	0	0	0	8	0
Cleveland	0	0	0	0	0	0	0	8	0
Columbus	0	0	0	0	0	0	0	0	1
Indiana:									
South Bend	0	0	0	0	0	0	0	4	0
Illinois:									
Chicago	5	1	1	1	0	0	4	6	2
Michigan									
Detroit	3	0	0	0	0	0	1	1	0
Flint	0	0	0	0	0	0	0	1	0
Wisconsin.									
Madison	0	0	0	0	0	0	1	2	0
Milwaukee	1	0	0	0	0	0	1	0	0
WEST NORTH CENTRAL									
Minnesota									
St. Paul	0	0	0	0	0	0	1	2	0
Iowa.									
Sioux City	0	--------	0	--------	0	--------	0	1	--------
Missouri									
Kansas City	0	0	0	0	0	0	0	9	0
St Joseph	0	0	0	0	0	0	0	1	0
St. Louis	1	0	0	0	0	0	1	1	1
Kansas									
Wichita	1	0	0	0	0	0	0	0	0
SOUTH ATLANTIC									
Delaware.									
Wilmington	0	0	0	0	0	0	0	1	0
Maryland									
Baltimore	0	0	1	2	0	0	2	0	0
Virginia									
Roanoke	0	0	0	0	0	1	0	0	0
West Virginia									
Wheeling	0	0	0	0	0	0	0	3	0
North Carolina:									
Raleigh	0	0	0	0	0	1	0	0	0
Winston-Salem	0	0	0	0	2	0	1	0	0
South Carolina.									
Charleston	0	0	0	0	8	0	0	0	0
Georgia:[1 2]									
Atlanta	0	0	0	0	1	1	0	0	0
Brunswick	0	0	0	0	0	1	0	0	0
Florida:									
Miami[2]	0	0	0	0	1	0	0	0	0
Tampa[2]	0	0	0	0	0	0	0	1	0
EAST SOUTH CENTRAL									
Kentucky:									
Louisville	1	0	0	0	0	0	0	0	0
Tennessee:									
Nashville	0	0	0	0	1	1	0	4	0
Alabama:									
Birmingham	0	0	0	0	4	2	0	0	0

[1] Dengue: 1 case at Savannah, Ga.
[2] Typhus fever: 3 cases at Savannah, Ga., 1 case at Miami, Fla., and 1 case at Tampa, Fla.

City reports for week ended September 3, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	4	0	0	0
Louisiana									
New Orleans	0	0	0	0	2	1	0	1	0
Shreveport	0	0	0	0	0	2	0	0	0
Oklahoma									
Oklahoma City	0	0	0	0	0	0	0	1	0
Tulsa	0	0	0	0	0	0	0	1	0
Texas.									
Dallas	0	0	0	0	0	0	0	1	1
Galveston	0	0	0	0	0	1	0	0	0
Houston	0	0	0	0	0	1	0	3	0
MOUNTAIN									
Nevada									
Reno	0	0	0	0	0	0	0	1	0
PACIFIC									
Washington.									
Seattle	0		0		0		1	2	
Tacoma	0	0	0	0	0	0	0	3	0
Oregon.									
Portland	1	0	1	0	0	0	0	0	0
California									
Los Angeles	0	0	0	0	0	0	0	6	1
Sacramento	0	0	0	0	0	0	0	3	0
San Francisco	0	0	0	0	0	0	0	9	0

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended September 3, 1927, compared with those for a like period ended September 4, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926, and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, July 31 to September 3, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended— Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug. 20, 1927	Aug. 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927
101 cities	78	78	69	90	68	80	65	[2] 80	73	[3] 85
New England	40	63	31	70	47	111	50	86	26	88
Middle Atlantic	88	92	62	97	59	94	56	78	59	77
East North Central	104	80	101	94	87	85	76	81	99	87
West North Central	52	42	56	67	83	44	81	54	67	[4] 72
South Atlantic	43	65	48	82	60	62	61	[5] 88	69	[6] 94
East South Central	10	31	57	25	21	51	57	61	41	51
West South Central	39	92	26	92	64	75	34	96	60	164
Mountain	118	135	73	180	146	54	73	[7] 119	91	117
Pacific	102	76	104	107	62	60	91	94	134	73

MEASLES CASE RATES

	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug. 20, 1927	Aug. 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927
101 cities	70	48	59	28	44	32	30	[2] 25	25	[3] 21
New England	83	93	68	63	52	84	38	58	33	58
Middle Atlantic	42	43	33	28	27	35	15	24	17	18
East North Central	113	29	84	19	72	13	43	13	31	11
West North Central	58	34	67	22	28	22	20	16	10	[4] 12
South Atlantic	47	38	80	14	35	27	15	[5] 32	9	[6] 20
East South Central	41	10	31	15	36	5	36	25	31	10
West South Central	9	55	4	21	9	42	4	17	0	42
Mountain	137	45	64	36	18	18	27	[7] 28	36	9
Pacific	121	144	94	60	78	71	94	52	91	42

SCARLET FEVER CASE RATES

	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug. 20, 1927	Aug. 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927
101 cities	61	51	51	58	48	50	55	[2] 54	51	[3] 58
New England	104	51	68	93	73	51	54	81	59	60
Middle Atlantic	38	36	30	39	29	31	32	38	25	38
East North Central	79	75	55	73	46	78	55	61	58	80
West North Central	101	62	119	75	119	64	133	62	131	[4] 72
South Atlantic	39	27	30	33	39	42	58	[5] 62	37	[6] 64
East South Central	31	51	47	36	36	20	62	87	57	76
West South Central	13	25	21	59	17	50	26	59	26	59
Mountain	64	126	36	117	36	81	64	[7] 64	82	63
Pacific	83	60	86	63	78	42	75	37	70	34

SMALLPOX CASE RATES

	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug. 20, 1927	Aug. 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927
101 cities	8	6	7	4	2	5	4	[2] 5	2	[3] 4
New England	0	0	0	0	0	0	0	0	0	0
Middle Atlantic	1	0	0	0	1	0	0	0	0	0
East North Central	9	9	1	5	2	7	7	6	0	7
West North Central	14	0	4	4	4	10	0	4	0	[4] 2
South Atlantic	11	9	11	5	6	4	9	[5] 0	9	[6] 0
East South Central	16	5	26	0	5	25	0	25	10	0
West South Central	13	17	21	0	0	4	9	0	4	0
Mountain	9	18	73	9	0	18	0	[7] 28	0	36
Pacific	24	21	32	24	5	13	13	31	13	18

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.
[2] Greenville, S. C., and Helena, Mont., not included.
[3] Sioux City, Iowa, Norfolk, Va., and Greenville, S. C., not included.
[4] Sioux City, Iowa, not included.
[5] Greenville, S. C., not included.
[6] Norfolk, Va., and Greenville, S. C., not included
[7] Helena, Mont., not included.

Summary of weekly reports from cities, July 31 to September 3, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug. 20, 1927	Aug. 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927
101 cities	28	25	35	25	41	37	40	[2] 31	40	[3] 32
New England	12	7	17	30	17	30	19	33	12	21
Middle Atlantic	19	13	24	15	34	20	39	21	34	28
East North Central	12	9	20	14	17	19	20	11	20	15
West North Central	18	26	24	22	48	38	42	20	42	[4] 10
South Atlantic	65	58	93	45	93	82	56	[5] 57	91	[6] 74
East South Central	181	183	140	97	186	219	233	204	176	183
West South Central	43	50	47	88	43	80	39	75	43	55
Mountain	27	45	73	36	73	27	18	[7] 46	9	54
Pacific	29	13	29	10	24	31	38	21	46	8

INFLUENZA DEATH RATES

	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug. 20, 1927	Aug. 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927
95 cities	2	2	1	3	3	4	3	[2] 5	3	[6] 5
New England	0	0	0	2	0	2	0	2	0	2
Middle Atlantic	2	1	1	2	1	2	3	2	2	3
East North Central	1	0	0	2	3	2	3	3	4	5
West North Central	0	2	2	6	2	0	8	2	4	4
South Atlantic	4	6	0	4	2	6	2	[5] 11	0	[6] 8
East South Central	0	5	10	5	0	10	0	15	16	5
West South Central	4	4	13	13	26	30	4	22	9	13
Mountain	9	9	0	0	0	0	18	[7] 9	9	18
Pacific	11	3	0	3	7	0	0	7	0	0

PNEUMONIA DEATH RATES

	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug. 20, 1927	Aug. 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927
95 cities	54	47	50	55	54	45	47	[2] 47	51	[6] 56
New England	54	33	31	77	40	49	33	51	50	49
Middle Atlantic	56	46	62	57	58	47	56	55	59	72
East North Central	42	44	35	41	35	35	37	34	34	51
West North Central	51	44	25	44	49	25	42	31	36	23
South Atlantic	68	53	57	72	87	53	59	[5] 37	64	[6] 44
East South Central	52	51	52	66	36	66	47	66	52	46
West South Central	97	69	106	56	66	69	71	65	49	82
Mountain	64	54	82	63	82	36	73	[7] 37	64	54
Pacific	57	62	39	55	78	72	21	62	78	55

[2] Greenville, S. C., and Helena, Mont., not included.
[3] Sioux City, Iowa, Norfolk, Va., and Greenville, S. C., not included.
[4] Sioux City, Iowa, not included.
[5] Greenville, S. C., not included.
[6] Norfolk, Va., and Greenville, S. C., not included.
[7] Helena, Mont., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30, 443, 800	30, 966, 700	29, 783, 700	30, 295, 900
New England	12	12	2, 211, 000	2, 245, 900	2, 211, 000	2, 245, 900
Middle Atlantic	10	10	10, 457, 000	10, 567, 000	10, 457, 000	10, 567, 000
East North Central	16	16	7, 650, 200	7, 810, 600	7, 650, 200	7, 810, 600
West North Central	12	10	2, 585, 500	2, 626, 000	2, 470, 600	2, 510, 000
South Atlantic	21	20	2, 799, 500	2, 878, 100	2, 757, 700	2, 835, 700
East South Central	7	7	1, 008, 300	1, 023, 500	1, 008, 300	1, 023, 500
West South Central	8	7	1, 213, 800	1, 243, 300	1, 181, 500	1, 210, 400
Mountain	9	9	572, 100	580, 000	572, 100	580, 000
Pacific	6	4	1, 946, 400	1, 991, 700	1, 475, 300	1, 512, 800

FOREIGN AND INSULAR

CHOLERA ON VESSEL

Further relative to cholera on steamship "Adrastus"—Yokohama—August 6, 1927.—Further information, dated August 12, 1927, shows the occurrence of a second case of cholera on the steamship *Adrastus* at Yokohama, Japan.[1]

THE FAR EAST

Report for week ended August 27, 1927.—The following report for the week ended August 27, 1927, was transmitted by the Eastern Bureau of the Health Section of the Secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Egypt:						
Alexandria	2	0	0	0	0	0
Port Said	0	0	0	0	1	0
Iraq:[1] Basra	0	0	49	17	1	1
Persia: Mohammerah	0	0	23	20	0	0
British India:						
Bombay	----	1	----	2	5	2
Negapatam	----	0	----	0	1	0
Madras	----	0	----	53	2	0
Calcutta	----	0	----	7	7	7
Rangoon	----	3	----	0	1	0
Ceylon: Colombo	1	0	0	0	0	0

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Dutch East Indies:						
Banjermasin	0	0	0	0	35	----
Makassar	2	2	0	0	0	0
French Indo-China: Turane	0	0	4	4	0	0
Philippine Islands. Manila	0	0	1	0	0	0
China						
Canton	0	0	6	2	0	0
Amoy	0	0	10	----	0	0
Shanghai	0	0	----	24	0	0
Macao	0	0	1	1	0	0

[1] The Iraq health service states that Muntafig and Amarah are infected with cholera

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Arabia.—Bahrein.

Persia.—Bender-Abbas, Bushire, Lingah.

India.—Karachi. Chittagong, Cochin, Tuticorin, Vizagapatam, Bassein, Moulmein.

Portuguese India.—Nova Goa.

Federated Malay States.—Port Swettenham.

Straits Settlements.—Penang, Singapore.

Siam.—Bangkok.

Dutch East Indies.—Batavia, Surabaya, Pontianak, Semarang, Cheribon, Balikpapan, Padang, Belawan-Deli, Tarakan, Sabang, Palembang, Samarinda, Menado.

Sarawak.—Kuching.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

Portuguese Timor.—Dilly.

Philippine Islands.—Iloilo, Jolo, Cebu, Zamboanga.

French Indo China.—Saigon and Cholon, Haiphong.

China.—Hong Kong, Tientsin, Tsingtao.

Formosa.—Keelung, Takao.

Chosen.—Chemulpo, Fusan.

Manchuria.—Yingkow, Antung, Harbin, Mukden, Changchun.

Kwantung.—Port Arthur, Dairen.

Japan.—Nagasaki, Yokohama, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

[1] Public Health Reports, Aug. 19, 1926, p. 2128.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns, Port Moresby.
New Guinea.—Port Moresby.
New Britain Mandated Territory.—Rabaul and Kokopo.
New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.
Western Samoa.—Apia.
New Caledonia.—Nouméa.
Fiji.—Suva.
Hawaii.—Honolulu.
Society Islands.—Papeete.

AFRICA

Egypt.—Suez.
Anglo-Egyptian Sudan.—Port Sudan, Suakin.

AFRICA—continued

Eritrea.—Massaua.
French Somaliland.—Djibouti.
British Somaliland.—Berbera.
Italian Somaliland.—Mogadiscio.
Kenya.—Mombasa.
Zanzibar.—Zanzibar
Tanganyika.—Dar-es-Salaam.
Seychelles.—Victoria.
Portuguese East Africa.—Mozambique, Beira, Lourenço-Marquez.
Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.
Reunion.—Saint Denis.
Mauritius.—Port Louis.
Madagascar.—Majunga, Tamatave, Diégo-Suarez

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from:

Aden Protectorate.—Kamaran, Aden, Perim.
Persia.—Abadan, Ahwaz, Minab.
Union of Socialist Soviet Republics.—Vladivostok.

Belated information:

Week ended August 20· *Madras*, cholera, 61 deaths.
Week ended August 13 *Pondicherry* and *Karikal*, nil.
Week ended August 13. *Makassar*, plague, 1 fatal case.

QUARANTINE MEASURES

The following reports of quarantine measures have been published by the health section of the League of Nations:

Syria.—The high commissioner of the French Republic for the States of Syria reports on August 6 that on account of the prevalence of cholera at Basra all travelers coming from Iraq must pass the frontier by the direct route leading from Baghdad to Damascus. Unvaccinated travelers will be vaccinated at control stations. Those who arrive at the frontier outside of these points will be vaccinated at the frontier posts. Arrivals from Basra, Abadan, and Mohammerah are considered as suspects and kept under observation for five days. These measures are of special importance because the route from Baghdad to Damascus is the usual way of communication from Iraq to Palestine and Egypt. Additional barrages have been organized at Aleppo, Damascus, Homs, and Tripoli. The sanitary passports of travelers on the Palestine Railway are controlled at Deraa and Beirut.

Italy.—The Ministry of Foreign Affairs reports on August 18 that arrivals from Abadan and other ports on the Persian Gulf are subject to quarantine measures against cholera. These measures came into effect on August 3.

Arrivals from Mytilene (Greece) were subjected to measures against bubonic plague from August 13.

Arrivals from Dakar and all other ports of Senegal were subjected to measures against yellow fever from August 8.

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CANADA

Communicable diseases—Week ended September 3, 1927.—The Canadian ministry of health reports cases of certain communicable diseases in six Provinces of Canada for the week ended September 3, 1927, as follows:

Diease	Nova Scotia	New Brunswick	Quebec	Manitoba	Saskatchewan	Alberta	Total
Influenza	5						5
Smallpox				2	13	3	18
Typhoid fever	5	7	33	5	3	1	54

Communicable diseases—Quebec—Week ended September 3, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended September 3, 1927, as follows:

Disease	Cases	Disease	Cases
Chicken pox	2	Scarlet fever	26
Diphtheria	31	Tuberculosis	36
German measles	1	Typhoid fever	33
Measles	3	Whooping cough	6

Measures against spread of poliomyelitis—Trail, British Columbia.—Information received under date of August 27, 1927, shows that measures have been instituted at Trail, British Columbia, to check the spread of poliomyelitis recently reported prevalent at that place.[1] Churches and places of entertainment have been ordered closed and the date for opening schools has been extended.

Typhoid fever — Montreal — January 2–September 10, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	May 14, 1927	367	16
Jan. 15, 1927	4	3	May 21, 1927	770	26
Jan. 22, 1927	1	2	May 28, 1927	853	38
Jan. 29, 1927	3	1	June 4, 1927	239	37
Feb. 5, 1927	1	0	June 11, 1927	128	36
Feb. 12, 1927	0	0	June 18, 1927	86	
Feb. 19, 1927	1	2	June 25, 1927	75	23
Feb. 26, 1927	1	1	July 2, 1927	66	21
Mar. 5, 1927	9	1	July 9, 1927	52	10
Mar. 12, 1927	203	4	July 16, 1927	39	4
Mar. 19, 1927	383	14	July 23, 1927	22	9
Mar. 26, 1927	568	22	July 30, 1927	23	10
Apr. 2, 1927	649	48	Aug. 6, 1927	16	5
Apr. 9, 1927	386	40	Aug 13, 1927	20	5
Apr. 16, 1927	175	38	Aug. 20, 1927	14	4
Apr. 23, 1927	125	43	Aug. 27, 1927	8	3
Apr. 30, 1927	105	23	Sept. 3, 1927	27	
May 7, 1927	106	19	Sept. 10, 1927	17	

1 Public Health Reports, Sept. 16, 1927, p. 2328.

Vital statistics—Quebec—June, 1927.—Births and deaths in the Province of Quebec for the month of June, 1927, were reported as follows:

Estimated population	2, 604, 000
Births	6, 815
Birth rate per 1,000 population	31. 40
Deaths	2, 905
Death rate per 1,000 population	13. 39
Deaths under 1 year	731
Infant mortality rate	107. 26
Deaths from:	
Accidents (all)	109
Cancer	128
Cerebrospinal meningitis	5
Diabetes	25
Diarrhea	148
Diphtheria	38
Heart disease	285
Influenza	37
Measles	32
Pneumonia	209
Scarlet fever	12
Syphilis	7
Tuberculosis (pulmonary)	212
Tuberculosis (other forms)	57
Typhoid fever	134
Whooping cough	37

CUBA

Communicable diseases — Habana — August, 1927.—During the month of August, 1927, communicable diseases were reported in Habana, Cuba, as follows:

Disease	New cases	Deaths	Remaining under treatment Aug 31, 1927	Disease	New cases	Deaths	Remaining under treatment Aug. 31, 1927
Chicken pox	2		11	Measles	10	2	18
Diphtheria	8		3	Paratyphoid fever	3		1
Filariasis			1	Scarlet fever	2		2
Leprosy			15	Typhoid fever [1]	26	11	50
Malaria [1]	67	2	52				

[1] Many of these cases from the interior.

EGYPT

Plague—August 6–12, 1927.—During the week ended August 12, 1927, five cases of plague were reported in Egypt, occurring in the district of Abou Kerkas.

Summary—January 1–August 12, 1927.—During the period January 1 to August 12, 1927, 63 cases of plague were reported in Egypt, as compared with 116 cases reported during the corresponding period of the year 1926.

ESTONIA

Communicable diseases—June, 1927.—During the month of June, 1927, communicable diseases were reported in the Republic of Estonia as follows:

Disease	Cases	Disease	Cases
Diphtheria	21	Tuberculosis	153
Measles	493	Typhoid fever	44
Scarlet fever	329	Typhus fever	4

Population: 1,114,650.

HAWAII TERRITORY

Plague rodent—Kukuihaele—August 17, 1927.—A plague-infected rat was reported found at Kukuihaele, Island of Hawaii, August 17, 1927.

JAMAICA

Smallpox (alastrim)—August 1-27, 1927.—During the period August 1 to 27, 1927, six cases of smallpox (reported as alastrim) were reported in the Island of Jamaica.

Other communicable diseases.—During the same period other communicable diseases were reported in Jamaica as follows:

Disease	Cases		Disease	Cases	
	Kingston	Other localities		Kingston	Other localities
Cerebrospinal meningitis		1	Leprosy	1	1
Chicken pox	3	5	Puerperal fever		1
Diphtheria		1	Tuberculosis	16	48
Dysentery		4	Typhoid fever	15	66
Erysipelas		1			

Population. Kingston, 62,707; island of Jamaica, 926,000.

LATVIA

Communicable diseases—May and June, 1927.—During the months of May and June, 1927, communicable diseases were reported in the Republic of Latvia as follows:

MONTH OF MAY, 1927

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	8	Paratyphoid fever	4
Diphtheria	50	Puerperal fever	2
Dysentery	4	Scarlet fever	262
Erysipelas	21	Tetanus	2
Influenza	93	Trachoma	23
Leprosy	1	Typhoid fever	42
Lethargic encephalitis	2	Typhus fever	5
Measles	998	Whooping cough	66
Mumps	3		

Population: 1,950,000.

MONTH OF JUNE, 1927

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	8	Paratyphoid fever	8
Diphtheria	33	Puerperal fever	3
Dysentery	3	Recurrent fever	1
Erysipelas	14	Scarlet fever	141
Influenza	24	Trachoma	14
Leprosy	5	Typhoid fever	57
Malaria	4	Typhus fever	4
Measles	635	Whooping cough	63
Mumps	6		

Population: 1,950,000.

MADAGASCAR

Plague—July 1-15, 1927.—During the period July 1–15, 1927, 21 cases of plague with 21 deaths were reported in the island of Madagascar. The occurrence was in the Provinces of Ambositra, Itasy, Moramanga, and Tananarive, and was distributed as follows: Ambositra, 1 case; Itasy, 10 cases; Moramanga, 1 case; Tananarive, 8 cases; and in the town of Tananarive, 1 case. The number of fatalities in the several Provinces corresponded with the number of cases. The distribution according to type of disease was: Bubonic, 6 cases; pneumonic, 12; and septicemic, 3.

Supplementary report.—Under date of August 2, 1927, additional cases were reported for Madagascar, for the Province of Itasy, as follows: June 1–15, 1927, cases, 9; deaths, 4, viz., bubonic cases 3, pneumonic 6. For June 16–30, 1927, 1 case, bubonic.[1]

MALTA

Communicable diseases—July 1-31, 1927.—During the month of July, 1927, communicable diseases were reported in the island of Malta as follows:

Disease	Cases	Disease	Cases
Broncho-pneumonia	6	Puerperal fever	1
Diphtheria	3	Scarlet fever	3
Erysipelas	1	Trachoma	41
Influenza	2	Tuberculosis	21
Lethargic encephalitis	1	Typhoid fever	70
Malaria	[1] 3	Whooping cough	12
Malta fever	90		

[1] Of which 2 contracted abroad. Population, civil, estimated, 227,440.

SENEGAL

Plague—Yellow fever—August 1-21, 1927.—During the three weeks ended August 21, 1927, plague was reported in the interior of Senegal as follows: Week ended August 7—cases, 62; deaths, 34; week ended August 14—cases, 91; deaths, 78; week ended August 21—cases, 61; deaths, 44; total, cases, 214; deaths, 156. In urban

[1] Public Health Reports, Aug. 26, 1927, p. 2185, and Sept. 16, 1927, p. 2329.

centers the occurrence was reported as follows: Dakar—36 cases, 25 deaths; Rufisque, 41 cases, 35 deaths; in four village settlements, 9 cases, 6 deaths. A fatal case of yellow fever was reported as having occurred at Grand Bassam, Ivory Coast, on July 29, 1927. At Obuasi, Ashanti, a case was reported on August 6; August 4, at Ho, Gold Coast, 2 cases, and at Meiatza, Togoland, a fatal case August 15 to 21. In Senegal from August 1 to 14, 7 cases and 2 deaths were reported.

SOUTHWEST AFRICA

Suspect plague case—Steamship "Tanganyika"—Luderitz—July 26, 1927.—Information dated August 5, 1927, shows the removal of a patient presenting symptoms suspicious of plague, from the steamship *Tanganyika* at Luderitz, southwest Africa. The history of the case shows the patient to have been admitted to hospital at Elizabethville, Belgian Congo, June 2, 1927, and to have left for Europe July 22, 1927, via Bulawayo and Cape Town, arriving at Cape Town July 22 and embarking on steamship *Tanganyika*. The patient and contacts were landed at Luderitz.

UNION OF SOUTH AFRICA

Plague—Orange Free State—July 24-30, 1927.—During the week ended July 30, 1927, a fatal case of plague, occurring in a native and on a farm, was reported in Rouxville District, Orange Free State. On July 26, 1927, a death from plague, occurring in a case reported during the previous week,[1] was notified in Edenburg District, Orange Free State.

VIRGIN ISLANDS

Communicable diseases—July, 1927.—During the month of July, 1927, communicable diseases were reported in the Virgin Islands of the United States as follows:

Island and disease	Cases	Remarks	Island and disease	Cases	Remarks
St. Thomas:			St. Croix:		
Chicken pox	1		Gonococcus infection	1	
Gonococcus infection	3		Malaria	1	Tertian.
Syphilis	1	Secondary.	Syphilis	4	Secondary.
Uncinariasis	1	Necator americanus.	Uncinariasis	7	Necator americanus.

[1] Public Health Reports, Sept. 16, 1927, p. 2329.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended September 23, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	July 24-Aug. 6	5		
Foochow	July 24-30			Several cases and deaths.
India				July 10-16, 1927. Cases, 12,615; deaths, 6,377.
Calcutta	July 31-Aug. 6	16	8	
Madras	Aug. 7-13	185	72	
Iraq:				
Baghdad	July 24-30	29	18	
Basra	July 31-Aug. 13	163	133	
On vessel:				
S. S. Adrastus	Aug. 6	1		At Yokohama, Japan. (See Public Health Reports, Aug. 19, 1927, p. 2128.)

PLAGUE

Place	Date	Cases	Deaths	Remarks
Egypt				Aug. 6-12, 1927: Cases, 5. Summary, Jan. 1-Aug. 12, 1927: Cases, 63; corresponding period, year 1926, cases, 116.
Hawaii Territory:				
Kukuihaele	Aug. 17			Island of Hawaii. Plague rodent.
India				July 10-16, 1927: Cases, 114, deaths, 71.
Madras Presidency	July 17-23	86	45	
Java.				
East Java and Madura	July 10-16	4	4	
Madagascar				July 1-15, 1927 Cases, 21; deaths, 21. Bubonic, 6; pneumonic, 12, septicemic, 3.
Province—				
Ambositra	July 1-15	1	1	Bubonic
Itasy [2]	June 1-15	9	4	Bubonic, 3, pneumonic, 6.
Do.[2]	June 16-30	1		Bubonic
Do.	July 1-15	10	10	Bubonic, 2; pneumonic, 7; septicemic, 1
Moramanga	do	1	1	Septicemic.
Tananarive	do	9	9	Bubonic, 4, pneumonic, 4; septicemic, 1
Senegal				Aug 1-21, 1927 Interior—Cases, 214; deaths, 156. Urban centers—Cases, 86; deaths, 66.
Dakar	Aug. 7-21	36	25	Including 1 case in suburb of Yoff
Rufisque	do	41	35	In 4 villages, 9 cases, 6 deaths.
Union of South Africa.				
Orange Free State	July 24-30	1	1	In Rouville District, in native.
Edenburg District	July 26		1	In case reported preceding week. (Public Health Reports, Sept. 16, 1927, p. 2329.)
Rouxville District	July 24-30	1	1	Native. On farm.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Brazil:				
Porto Alegre	July 1-31	5		
Rio de Janeiro	Aug. 14-20	3		
British South Africa:				
Northern Rhodesia	July 23-Aug. 5	2		Native.
Canada:				
Alberta	Aug. 28-Sept. 3	3		
Manitoba	do	2		
Ontario—				
Ottawa	Aug. 28-Sept. 10	22		
Saskatchewan	Aug. 28-Sept. 3	13		
Ceylon:				
Colombo	July 31-Aug. 6	1	1	
France:				
Paris	July 10-31	3		

[1] From medical officers of the Public Health Service, American consuls and other sources.
[2] Received out of date. Omitted from Public Health Reports, Aug. 26, 1927, p. 2185, and Sept. 16, 1927, p. 2329.

Reports Received During Week Ended September 23, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Great Britain.				
England and Wales—				
Leeds	Aug. 21-27	5		
Stoke-on-Trent	do	1		
India				July 10-16, 1927: Cases, 3,132; deaths, 891.
Calcutta	July 31-Aug. 6	11	10	
Madras	Aug. 7-13	4		
Italy:				
Rome	June 13-19	1		
Jamaica				Aug. 1-27, 1927: Cases, 6; reported as alastrim.
Japan:				
Nagasaki	Aug. 8-14	1	1	
Paraguay:				
Asuncion	July 10-23		2	
Persia:				
Teheran	Apr. 22-May 22		3	

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Estonia				June, 1927: Cases, 4.
Latvia				May 1-June 30, 1927: Cases, 9.
Mexico:				
Mexico City	Aug. 14-27	14		Including municipalities in Federal District.
Palestine				
Jaffa	Aug. 9-15	1		
Jerusalem	July 15-Aug. 15	2		
Portugal:				
Oporto	Aug. 20-27	1		
Spain.				
Seville	Aug. 19-25		2	
Tunisia:				
Tunis	Aug. 15-21	1		

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Ashanti:				
Obuasi	Aug. 6	1	1	
Gold Coast	Aug. 4	2		
Ivory Coast	July 29	1	1	
Senegal				
Khombole	Aug. 1-14	3		
Oukuam	do	2	1	
St. Louis	do	2	1	
Togoland:				
Meiatza	Aug. 15-21	1	1	

Reports Received from June 25 to September 16, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-July 23	1	1	
Canton	May 1-July 23	16	7	
Hong Kong	July 17-23	2	2	
Kulangsu	June 21	1		
Shanghai	June 19-25	2		
Do	July 31-Aug. 6		3	In international settlement and French concession.
Swatow	May 15-July 30	96	13	
India	Apr. 17-July 9			Cases, 89,569; deaths, 52,631.
Bombay	May 8-July 23	27	11	
Calcutta	May 8-July 30	564	347	
Karachi	May 29-June 4	1	1	
Madras	June 19-Aug. 6	383	200	
Rangoon	May 8-July 30	17	13	

[1] From medical officers of the Public Health Service, American consuls, and other sources.

Reports Received from June 25 to September 16, 1927—Continued

CHOLERA—Continued

Place	Date	Cases	Deaths	Remarks
India, French Settlements in	Mar 30–June 30	15	8	
Indo-China (French)	Apr. 1–July 10			Cases, 11,145.
Annam	do	1,467		
Cambodge	do	235		
Cochin-China	do	1,354		
Saigon	June 4–July 11	9	4	
Tonkin	Apr. 1–June 30	8,089		
Iraq:				
Basra	Reported July 25	9	7	
Japan:				
Yokohama	July 31–Aug. 6	1	1	
Persia				
Abadan	July 19–31		166	
Mohammerah	do		61	
Nasseri	do		10	
Philippine Islands.				
Manila	July 17–23	1		
Bulacan Province	June 7–July 8	3	2	
Leyte Province—				
Barugo	June 29	1	1	
Carigara	June 23	1	1	Final diagnosis not received.
Palo	May 18	1		
Siam	May 1–July 23			Cases, 226; deaths, 130.
Bangkok	do	43	12	
On vessel				
S. S. Adrastus	Reported Aug. 6	1	1	At Yokohama, Japan.
War Mehtar (oil tanker)	Aug. 4	1	1	At Saffagha, Egypt.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Argentina	Jan. 1–Aug. 2			Cases, 80; deaths, 44.
Buenos Aires	Apr. 10–May 7	4	3	
Cordoba	Jan. 11–Aug. 6	52	29	
Corrientes	June 1	1	1	
Entre Rios	Mar 29–Aug 2	7	1	
Santa Fe	Apr. 28–May 16	4	3	
Territory—				
Chaco—				
Barranqueras	May 29	2	2	
Formosa	June 25	3	2	
Pampa	July 27–Aug. 2	4		
Rio Negro	Aug. 6	1		
City—				
Merou	Reported July 14			Present.
Rosario	May 7	1	1	
Santa Fe	May 16	4	2	
Azores:				
Ribeira Grande	June 12–18			9 miles from port.
St. Michaels Island	May 15–July 30	3		
British East Africa:				
Kenya	Apr. 24–July 2	60	14	
Nairobi	May 22–28	6		
Tanganyika	Mar 20–May 28		37	
Uganda	Jan. 1–Feb. 28	138	121	
Do	Mar. 27–June 18	366	309	
Canary Islands:				
Laguna district—				
Tejina	June 17	1		
Ceylon:				
Colombo	May 1–July 2	17	11	Plague rats, 4.
China:				
Amoy	July 3–23			Present in surrounding country.
Ecuador:				
Guayaquil	June 1–July 31			Rats taken, 48,290; found infected, 34.
Egypt	May 1–July 8			Cases, 7; deaths, 2.
Alexandria	June 4–10	1		
Beni-Souef	June 4–July 13	5	2	
Biba	June 4–10	1		At Nana.
Dakhalia	June 24–July 9	6	1	
Minia	Aug. 8–9	4		
Port Said	June 24–July 21	4	1	
Tanta district	June 4–10	1		
Greece	May 1–June 30	4	3	
Athens	June 1–Aug. 6	2		Including Piraeus.
Mytilene	Aug. 9	1		
Patras	May 30–Aug. 6	6	1	

Reports Received from June 25 to September 16, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Hawaii Territory:				
Hamakua	July 15			1 plague rodent.
Honokaa	May 17-23	2	2	
Kukuihaele	Aug. 12	1	1	
Paauilo	July 26-Aug. 1		4	
India	Apr. 17-July 9			Cases, 21,700; deaths, 8,253.
Bombay	May 8-July 23	80	67	
Madras	May 1-July 16	267	122	
Rangoon	May 8-July 30	48	44	
Indo-China (French)	Apr. 1-July 10	32		
Kwang-Chow-Wan	May 21-July 10	68		
Iraq:				
Baghdad	Apr. 8-May 28	12	1	
Java:				
Batavia	May 1-July 23	182	183	Province.
East Java and Madura	May 22-July 2	24	23	
Pasoeroean Residency	May 9			Outbreak reported at Nagdiwono.
Surabaya	Apr. 17-May 7	24	24	
Madagascar				Mar. 16-Apr. 30, 1927: Cases, 256; deaths, 135.
Province—				
Ambositra	Mar. 16-June 30	93	86	
Antisrabe	Mar. 16-May 15	8	8	
Miarinarivo (Itasy)	Mar. 16-May 31	45	45	
Moramanga	May 16-June 30	23	22	
Tananarive	Mar 16-June 30	212	185	
Tananarive Town	do	22	20	
Nigeria	Mar. 1-May 31	228	177	
Peru	Apr.-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr 1-May 31	7	4	
Lima	do	13	4	
Lima City	Apr. 1-30	5	1	
Senegal	May 23-July 17			Cases, 442; deaths, 259.
Baol	June 2-July 31	45	23	
Cayor Frontier	July 4-31	126	74	
Dakar	June 20-July 30	80	50	
Facel	July 6	17	8	
Guindel	June 20-26	11	2	
M'Bour	July 6-10	28	23	
Medina	June 13-19	2	2	
Pout	July 4-10	1		
Rufisque	May 23 July 30	163	117	
Thies district	do	27	9	
Tivaouane	June 2-July 17	50	32	
Siam	Apr. 1-July 23			Cases, 10, deaths, 7.
Bangkok	May 8-June 11	2	1	
Syria:				
Beirut	June 11-July 10	3		
Tunisia	Apr. 21-July 10	144		
Tunis	July 25-Aug. 1	1		
Turkey:				
Constantinople	May 13-19	1		
Union of South Africa:				
Cape Province—				
Maraisburg district	May 1-14	2	2	Native.
Orange Free State—				
Edenburg district	July 17-23	3	2	Natives; on farm.
On vessel	July 10-16	3		On Norwegian vessel at Gavle, 125 miles north of Stockholm.
S. S. Avoroff	June 24-30	1		On Greek warship at port of Athens.
S. S. Ransholm	Aug. 5	3		At Gefle, Sweden, from Rufisque, Senegal.

SMALLPOX

Algeria	Apr. 21-July 10			Cases, 648.
Algiers	May 11-June 30	8		
Oran	May 21-Aug. 10	47		
Arabia:				
Aden	July 17-Aug. 1	2	1	
Brazil:				
Rio de Janeiro	May 22-July 30	9	8	
British East Africa:				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 29-June 18	2	22	
Zanzibar	Apr. 1-May 31	19	7	

Reports Received from June 25 to September 16, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
British South Africa:				
Northern Rhodesia	Apr. 30-July 23	106	2	
Canada	June 5-Aug. 27			Cases, 395.
Alberta	June 12-Aug. 27			Cases, 93.
Calgary	do	9		
British Columbia—				
Vancouver	May 23-29	2		
Manitoba	June 5-Aug. 27			Cases, 29.
Winnipeg	June 12-Aug. 27	17		
Ontario	June 5-Aug 27			Cases, 177.
Ottawa	June 12-Sept. 2	100		
Sarnia	Aug 7-13	1		
Toronto	June 19-July 23	9		
Quebec	June 19-Aug. 27	15		
Saskatchewan	June 12-Aug 27			Cases, 58.
Moose Jaw	Aug. 14-20	5		
Regina	July 17-Aug 27	10		
Ceylon	May 1-7			Cases, 3; deaths, 1.
China:				
Amoy	May 8-28	1		
Do	July 3-16			Present in surrounding country.
Antung	July 4-31	3		
Cheefoo	May 8-14			Present.
Foochow	May 8-July 16			Do
Hong Kong	May 8-July 30	19	18	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-July 30	8		
Dairen	May 2-July 3	10	5	
Fushun	May 15-July 30	10		
Harbin	June 13-July 10	4		
Kai-Yuan	July 3-9	2		
Mukden	May 22-July 30	6		
Pensihu	July 3-9	1		
Ssupingkai	May 8-July 9	3		
Tientsin	May 8-July 30	18		
Chosen	Feb 1-May 31			Cases, 451; deaths, 195.
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr. 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr. 1-30	1		
Curaçao	May 29-June 4	1		Alastrim.
Ecuador:				
Guayaquil	June 1-30	2		
Egypt	May 7-July 29			Cases, 21, deaths, 3.
Alexandria	May 21-June 17	4	1	
Cairo	Jan. 22-Apr. 15	14	3	
France	Apr 1-June 30			Cases, 178.
Lille	July 24-30	1		
Paris	May 21-June 30	11	2	
Gold Coast	Mar. 1-May 31	33	7	
Great Britain.				
England and Wales	May 22-Aug 20			Cases, 2,591.
Birmingham	Aug. 14-20	1		
Bradford	May 29-June 11	2		
Cardiff	June 19-July 2	4		
Leeds	July 17-Aug. 20	5		
Liverpool	July 17-30	1		
London	May 15-June 18	2		
Newcastle upon Tyne	June 12-Aug 13	5		
Sheffield	June 12-Aug. 6	25		
Scotland—				
Dundee	May 29-July 2	5		
Greece	June 1-30	14		
Salonika	July 12-18		1	
Guatemala:				
Guatemala City	June 1-30		9	
Guinea (French)	June 4-10	9		
India	Apr. 17-July 9			Cases, 60,217; deaths, 15,704.
Bombay	May 28-July 23	199	131	
Calcutta	May 8-July 30	363	270	
Karachi	May 15-Aug 6	10	5	
Madras	May 22-July 30	18	6	
Rangoon	May 8-July 30	169	52	
India, French Settlements in	Mar. 20-June 18	174	111	
Indo-China (French)	Mar. 21-July 20			Cases, 314.
Saigon	May 14-20	1	1	
Iraq:				
Baghdad	Apr. 10-16	2		
Basra	Apr 10-July 16	2	1	

Reports Received from June 25 to September 16, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Italy	Apr. 10–May 21	13		
Jamaica	May 29–July 30	24		Reported as alastrim.
Japan	Apr. 3–May 7			Cases, 19.
Nagasaki City	June 20–Aug. 7	25	6	
Taiwan Island	May 21–31	1		
Java:				
Batavia	May 22–July 23	3		
East Java and Madur	Apr. 24–July 9	12		
Latvia	Apr. 1–30	1		
Mexico	Mar. 1–31			Deaths, 162.
Durango	June 1–30		1	
La Oroya	Apr. 1–June 30			Present.
Monterey	July 1–31	6	4	
San Luis Potosi	May 29–Aug. 13		11	
Tampico	June 1–July 31	1	2	
Torreon	Aug. 7–13		1	
Morocco	Apr. 1–June 30	154		
Netherlands India.				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in two localities.
Pasir Residency	Apr. 30–May 6			Epidemic outbreak.
Samarinda Residency	May 21–27			Do.
Nigeria	Mar. 1–May 31	2,077	513	
Persia:				
Teheran	Feb 21–Apr. 20		5	
Poland	Apr. 10–July 9	17	2	
Portugal:				
Lisbon	May 29–Aug. 6	17	1	
Senegal:				
Medina	July 4–10	7		
Siam	Apr 1–July 23			Cases, 168, deaths, 40.
Bangkok	May 1–July 23	13	7	
Spain.				
Valencia	May 29–June 4	2		
Straits Settlements	June 12–18			Cases, 3.
Singapore	Apr. 1–June 18	7	2	
Sumatra:				
Medan	June 5–11	2		
Switzerland.				
Berne	June 26–July 2	1		
Tunisia	Apr. 1–June 10			Cases, 10.
Tunis	June 1–10	1		
Union of South Africa:				
Cape Province	July 17–23			Outbreaks.
Elliott district	May 11–June 10			Outbreaks.
Idutywa district	July 3–9			Do
Kalanga district	May 11–June 10			Do.
Transvaal—				
Barberton district	May 1–7			Do.
Venezuela				
Maracaibo	July 12–18		1	

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21–July 20			Cases, 399; deaths, 39.
Algiers	May 11–July 31	26		
Oran	May 21–Aug. 10	33		
Bulgaria	Mar. 1–June 20			Cases, 206; deaths, 18.
Sofia	June 4–Aug. 5	2		
Chile:				
Antofagasta	Apr 16–May 31	1		
Concepcion	May 29–June 4		1	
La Calera	Apr. 16–May 31	1		
Ligua	Mar 16–31	2		
Puerto Montt	Apr. 16–May 31	1		
Santiago	do	5	1	
Talcahuano	July 10–16		1	
Valparaiso	Apr 16–Aug. 6	4	1	
China:				
Manchuria—				
Harbin	July 25–31	3		
Mukden	May 29–June 4	1		
Tientsin	July 10–16	1		
Chosen	Feb. 1–May 31			Cases, 512; deaths, 42.
Chemulpo	May 1–June 30	15	1	
Gensan	do	2		
Seoul	Apr. 1–June 30	30	2	

Reports Received from June 25, to September 16, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Czechoslovakia	Apr. 1-June 30			Cases, 49.
Egypt	May 28-July 29			Cases, 120; deaths, 18.
Alexandria	May 21-Aug 5	13	5	
Cairo	Jan 15-Apr. 22	30	8	
Estonia	Apr. 1-30			Case, 1.
Greece	June 1-30	2		
Athens	do		9	
Iraq:				
Baghdad	Apr. 24-30	1		
Irish Free State:				
Cork County	July 3-9	1		In urban district.
Latvia	Apr. 1-May 31	17		
Lithuania	Feb. 1-June 30	303	37	
Mexico	Feb. 1-Mar 31			Deaths, 88.
Mexico City	May 29-Aug. 6	26		Including municipalities in Federal District.
San Luis Potosi	July 31-Aug. 6		1	
Morocco	Apr. 1-July 10	815		
Palestine	May 24-Aug 8			Cases, 16.
Haifa	do	6		
Jaffa	Aug 2-8	1		
Jerusalem	June 28-July 4	1		
Mahneim	May 17-23	1		In Safad district.
Nazareth	July 19-25	1		
Safad	May 17-Aug 8	10		
Peru:				
Arequipa	Apr 1-30		1	
Poland	Apr. 10-July 9	1,009	92	
Portugal:				
Lisbon	May 29-June 4	1		
Rumania	Apr 3-June 25	923	61	
Tunisia	Apr 22-July 20			Cases, 158.
Tunis	July 5-11	1		
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa	Apr 1-30			Cases, 55; deaths, 8, native. In Europeans, cases, 2.
Cape Province	Apr. 1-July 23	42	5	
Albany district	June 5-11			Outbreaks.
East London	May 22-28	1		Do.
Glen Gray district	May 1-7			Do
Kentani district	June 26-July 2			Do
Qumbu district	May 1-7			Do.
Umzimkulu district	June 26-July 2			Do
Natal	Apr 1-July 9	7	3	
Impendhle district	June 5-11			Do.
Orange Free State	Apr 1-July 23	5		
Transvaal	Apr 1-30	1		
Johannesburg	July 3-16	18	5	
Yugoslavia	May 1-July 31			Cases, 15, deaths, 4.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Dahomey (West Africa):				
Porto Novo	July 1	1	1	In Syrian woman.
Gold Coast	Apr. 1-May 31	45	20	
Liberia:				
Monrovia	May 29-July 8	4	5	
Senegal	May 27-July 31			Cases, 5, deaths, 2.
Dakar	July 9	1		
Do	Aug. 8	2	2	
M'Bour	May 27-June 19	5	5	
Ouakam	June 2-Aug 8	2	1	
St. Louis	Reported Aug. 21		1	
Thies	July 10	1	1	In European.
Tivaouane	May 27-June 8	5	5	

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TREASURY DEPARTMENT

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SEPTEMBER 30 - 1927

SPECIAL ARTICLES

Prevalence of Poliomyelitis in the United States

Pellagra-Preventive Action of the Cowpea and of Wheat Germ

The Sudan and Belgian Congo Join the International Office

UNITED STATES
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HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

ASST. SURG. GEN. R. C. WILLIAMS, CHIEF OF DIVISION

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PUBLIC HEALTH REPORTS

VOL. 42 SEPTEMBER 30, 1927 NO. 39

POLIOMYELITIS IN THE UNITED STATES

In June, 1927, reports from California showed more than the usual seasonal rise in the number of cases of poliomyelitis. Early in July a number of cases of this disease were reported in New Mexico. Later, other States reported local epidemics or a general increased prevalence of the disease. Illinois, Ohio, Massachusetts, Pennsylvania, and New York City are among the other localities most affected.

A comparison of the weekly telegraphic reports from States for the 10 weeks ended September 10, 1927, with the corresponding reports for the years 1925 and 1926 shows that the total number of cases reported for the period in 1927 was almost the same as the number for the corresponding period in 1925, but the figures were nearly three times those for the same period of 1926. Reports for the week ended September 17, 1927, however, show about five times as many cases as for the corresponding period of 1926 and somewhat more than twice as many as in 1925. The following are among the States reporting an increase in the number of cases for the week ended September 24, 1927: Illinois, Kansas, Maine, Michigan, Missouri, and Texas. Among the States showing a decrease in the number of cases for the week are California, Connecticut, New Jersey, New York, and Pennsylvania. The telegraphic reports from States for the week ended September 24 will be found on page 2402.

A STUDY OF THE PELLAGRA-PREVENTIVE ACTION OF THE COWPEA (VIGNA SINENSIS) AND OF COMMERCIAL WHEAT GERM

By JOSEPH GOLDBERGER and G. A. WHEELER, *Surgeons, United States Public Health Service*

In the present communication we desire to report the results of a study of pellagra prevention with cowpeas and with commercial wheat germ. This study was carried out, as were our previous studies of single foods (1) (2) (3), at the Georgia State Sanitarium, to the trustees, superintendent, officers, and staff of which we have become increasingly indebted for the valuable cooperation which has been extended us now for a period of over 10 years.

COWPEAS

Early in the course of our study of pellagra, one of us (J. G.) was led to interpret certain epidemiological observations as indicative of the value of the legumes as pellagra preventives. In 1918 and 1919, utilizing the exceptionally favorable clinical opportunities for the study of the prevention of pellagra afforded by the Georgia State Sanitarium, Goldberger and Tanner (1) carried out some tests of soy beans and of cowpeas (*Vigna sinensis*) the results of which appeared to indicate that these legumes possessed little, if any, pellagra-preventive value.

The results of some of our more recent studies (2) (3) (4) have led us provisionally to conclude that all foods known to contain the so-called vitamin B[1] contain the pellagra-preventing factor P–P. This conclusion would seem to be negatived by the results of the above-mentioned pellagra-preventive tests of soy beans and cowpeas, since dried legumes are generally considered to be good sources of vitamin B. In considering this apparent inconsistency in the light of some of our more recent experiences, notably with the tomato (3), it seemed to us probable that the preventive failure of the soy bean and of the cowpea was due to the use of insufficient quantities, even though the quantities actually used were quite liberal. This and the importance of the dried legumes as food made it seem worth while to study the pellagra-preventive potency of at least one of them again. Accordingly, we began such a study about the middle of July, 1926, the results of which we now desire to report.

In this study we used the cowpea, the variety known as the California black-eyed pea. We did so principally because we had worked with it in the study above referred to, and because it is very commonly used as a food by the rural population of our Southern States, among whom pellagra is endemic.

In the study carried out during 1919 (1) the daily ration of cowpeas was 200 grams (7 ounces). In that test the cowpeas were administered in the form of a purée and were the only known possible source of the pellagra-preventing factor in the diet, with the exception of such, probably entirely negligible, amount as may have been present in the daily ration of 4 grams of lemon juice.

In the present instance we planned to give our patients the cowpea ration as a part of a more conventionally constituted diet and with as little disarrangement of the latter as possible, especially with respect to such of the other components as might possibly contain the P–P factor. To accomplish this we deemed it impracticable to add more than 150 grams (5 ounces) of cowpeas to the basic diet. This is much less than was given in the original study. We thought, however, that some such reduction might be made to compensate for the P–P that might already be present in the corn meal, flour,

[1] In the present communication the term "vitamin B" or "water-soluble B" is used to designate the mixture of substances with antineuritic and growth-promoting properties.

cowpeas, and rice, and that was known to be in the tomato juice (3) of the diet to which the cowpeas were now to be added and still keep the level of P–P in the diet thus constituted at or, it was hoped, even raise it above, that of the cowpea purée supplied in 1919. As thus constituted the composition of the diet is shown in Tables 1 and 2.

TABLE 1.—*Approximate composition*[1] *of a cowpea-supplemented diet offered daily to each of a group of colored insane female pellagrins during the period July 15, 1926, to February 28, 1927*

(Total calories, 2,184)

Diet		Nutrients		
Articles of diet	Quantity	Protein	Fat	Carbohydrate
BASIC	*Grams*	*Grams*	*Grams*	*Grams*
Corn meal[2]	200	16.8	9.4	148.0
Wheat flour	76	8.7	.8	57.1
Cowpeas (*Vigna sinensis*)[3]	28	6.0	.4	17.0
Rice	14	1.1		11.1
Lard	42		42.0	
Tomato juice[4]	130			
SUPPLEMENTAL				
Cowpeas (*Vigna sinensis*)[3]	150	32.1	2.1	91.2
Cod-liver oil	15		15.0	
Calcium carbonate	3			
Sirup iodide of iron (U. S. P.) (2 drops)				
Dilute hydrochloric acid (U. S. P.) (90 drops)				
Total nutrients		64.7	69.7	324.4
Nutrients per 1,000 calories		29.[illegible]	31.7	148.0

[1] Factors used for computing [illegible] from Atwater and Bryant, Office of Experiment Stations, U. S. Department of Agriculture Bull. 28, 1906.
[2] Whole meal [illegible] in kitchen and made into corn bread and "mush."
[3] The variety known as the California black-eyed pea. Ground into a coarse meal and boiled.
[4] Pressed through a cloth from canned tomatoes.

TABLE 2.—*Approximate composition*[1] *of a cowpea-supplemented diet offered daily to each of a group of colored insane female pellagrins during the period February 28 to July 15, 1927*

(Total calories, 2,171)

Diet		Nutrients		
Articles of diet	Quantity	Protein	Fat	Carbohydrate
BASIC	*Grams*	*Grams*	*Grams*	*Grams*
Corn meal[2]	270	22.7	12.7	199.8
Wheat flour	14	1.6	.1	10.5
Cowpeas (*Vigna sinensis*)[3]	28	6.0	.4	17.0
Lard	42		42.0	
Tomato juice[4]	130			
SUPPLEMENTAL				
Cowpeas (*Vigna sinensis*)[3]	150	32.1	2.1	91.2
Cod-liver oil	15		15.0	
Calcium carbonate	3			
Sirup iodide of iron (U. S. P.) (2 drops)				
Dilute hydrochloric acid (U. S. P.) (90 drops)				
Total nutrients		62.4	72.3	318.5
Nutrients per 1,000 calories		28.7	33.5	146.8

[1] Factors used for computing are from Atwater and Bryant, Office of Experiment Stations, U. S. Department of Agriculture Bull. 28, 1906.
[2] Whole maize meal sifted in the kitchen and made into corn bread and "mush."
[3] The variety known as the California black-eyed pea.
[4] Pressed through a cloth from canned tomatoes.

A total of 22 colored insane patients came under observation for pellagra prevention with the cowpea diet. One of these patients died of an intercurrent condition at the end of about five months; the others continued under observation for one year or until evidence of active pellagra developed requiring other treatment. During this period 2 of the 21 patients developed definite recurrences. In one of these the dermatitis made its first appearance about April 17, 1927, and in the other about April 25, 1927, or in both at the end of about nine months of the cowpea treatment. A third patient developed a mild stomatitis, with no dermal lesions, during April, 1927, which, however, subsided spontaneously without interfering with her food taking. Her appetite was excellent throughout to the end of the period (one year) of observation. The patients presenting the dermal recurrences had also had good appetites throughout and had consumed virtually all of the cowpeas offered.

It is clear that 150 grams of cowpeas (in conjunction with the other components of the diet) were insufficient to prevent completely the recurrence of pellagra. It must be noted, however, that the interval (nine months) before the development of the recurrences was considerably longer than has ordinarily been the case in our experience. Furthermore, the development of but two or certainly not more than three cases in a group of 21 patients during a period of one year is decidedly less than we should ordinarily expect. Our experience with this class of patients has led us to expect a recurrence rate of fully 40 to 50 per cent within three to seven or eight months in the absence of an adequate preventive. The long interval (nine months) before the recurrence and the relatively low recurrence rate (15 per cent) would therefore seem to indicate that the cowpea-supplemented diet had had a decidedly beneficial, even though not a fully preventive, effect. We may conclude, therefore, that the pellagra-preventing factor (P–P) is present in the cowpea, but in a relatively small amount.

Discussion.—The result of the study outlined in the foregoing would seem to differ appreciably from that of the study carried out in 1919. In the present study evidence of a preventive effect is recognizable, whereas in the study of 1919 no preventive effect could be vouched for. This difference in results may be explained, however, by the difference in the character of the test diets to which reference has already been made. In the 1919 study 200 grams of cowpeas supplied virtually all of the pellagra preventive present in the diet, whereas in the present study the cowpeas (178 grams in all) were combined with other foods, some of which (tomatoes) certainly, and others (corn meal, etc.) very probably, contained more or less of the pellagra preventive. There is, of course, no basis for definitely

deciding (other than the physiological reaction) how the total amount of pellagra preventive (P-P) yielded by these combined sources compares with that yielded by the 200 grams of cowpeas alone. Notwithstanding this, however, it seems to us quite probable that the 200 grams of corn meal and 130 grams of tomato juice (not counting the wheat flour and rice—highly milled products) more than compensate for the difference in P-P content represented by 22 grams of cowpeas and 4 grams of lemon juice. Viewed thus, it seems quite probable that the P-P content of the diet in the present study exceeded that of the 1919 study and satisfactorily explains the difference in the results under consideration.

In our earlier studies of single foods we had in mind primarily the effectiveness of the food studied as a practical preventive when given in what would be conventionally considered a "liberal" allowance. If complete protection was not afforded, we were disposed to interpret this as indicating a complete lack of preventive action. Our more recent studies have impressed us with the vital importance of the quantitative factor. The result of the present study adds emphasis to this and clearly indicates not only that the pellagra-preventive failure of the soy bean in the 1919 study is in itself inconclusive but makes it probable that this bean actually does possess pellagra-preventive potency, even if, as in the case of the cowpea, of a relatively low order.

WHEAT GERM

In the course of our study of black tongue of dogs we were led to test the preventive potency of wheat, and thus we found that this cereal, particularly the germ, contains the black-tongue-preventing factor (5). Since we had provisionally concluded that black tongue of dogs is the analogue of pellagra in man (2), the favorable indications afforded by the study of wheat germ in the canine disease at once suggested the desirability of studying its preventive action in human pellagra. We have carried out such a study, the results of which we now wish to report.

This study was begun July 20, 1926, virtually at the same time as was that of cowpeas. The wheat germ was a commercial product secured from a large flour mill in five successive batches during the progress of the study. The allowance decided upon was 150 grams per patient per day, or the same as that of cowpeas in the study of that legume. The wheat germ was boiled with a portion of the other cereals of the diet, and a third of the daily allowance was served as a part of each of the three daily meals. The composition of the wheat-germ-supplemented diet is shown in Tables 3 and 4.

TABLE 3.—*Approximate composition [1] of a wheat-germ-supplemented diet offered daily to each of a group of white insane female pellagrins during the period July 20, 1926, to January 12, 1927*

(Total calories, 2,093)

Diet		Nutrients		
Articles of diet	Quantity	Protein	Fat	Carbohydrate
BASIC	*Grams*	*Grams*	*Grams*	*Grams*
Corn meal [2]	200	16.8	9.4	148.0
Wheat flour	62	7.1	.6	46.6
Cowpeas [3]	28	6.0	.4	17.0
Rice	14	1.1		11.1
Lard	31		31.0	
Tomato juice [4]	130			
SUPPLEMENTAL				
Wheat germ [5]	150	35.9	14.1	77.3
Cod-liver oil	14		14.0	
Calcium carbonate	3			
Sirup iodide of iron (U. S. P.) (2 drops)				
Dilute hydrochloric acid (U. S. P.) (90 drops)				
Total nutrients		66.9	69.5	300.0
Nutrients per 1,000 calories		31.9	33.1	142.9

[1] Except for wheat germ, factors used for computing are from Atwater and Bryant, Office of Experiment Stations, U. S. Department of Agriculture Bull. 28, 1906.
[2] Whole maize meal, sifted in kitchen and made into corn bread and "mush."
[3] The variety known as the California black-eyed pea.
[4] Pressed through a cloth from canned tomatoes.
[5] Commercial wheat germ. Average of analyses of 5 samples made in division of chemistry of Hygienic Laboratory: Moisture, 10.9; protein (N×5.7), 23.9; fat, 9.4; ash, 4.3; carbohydrate (by diff.), 51.5.

TABLE 4.—*Approximate composition [1] of a wheat-germ-supplemented diet offered daily to each of a group of white insane female pellagrins during the period January 12, 1927, to July 20, 1927*

(Total calories, 2,242)

Diet		Nutrients		
Articles of diet	Quantity	Protein	Fat	Carbohydrate
BASIC	*Grams*	*Grams*	*Grams*	*Grams*
Corn meal [2]	200	16.8	9.4	148.0
Grits (granular corn meal)	28	2.6	.5	21.1
Wheat flour	62	7.1	.6	46.6
Cowpeas [3]	28	6.0	.4	17.0
Rice	28	2.2	.1	22.1
Lard	31		31.0	
Tomato juice [4]	130			
SUPPLEMENTAL				
Wheat germ [5]	150	35.9	14.1	77.3
Cod-liver oil	14		14	
Calcium carbonate	3			
Sirup iodide of iron (U. S. P.) (2 drops)				
Dilute hydrochloric acid (U. S. P.) (90 drops)				
Total nutrients		70.6	70.1	332.1
Nutrients per 1,000 calories		31.5	31.3	148.2

[1] Except for wheat germ, factors used for computing are from Atwater and Bryant, Office of Experiment Stations, U. S. Department of Agriculture Bull. 28, 1906.
[2] Whole maize meal, sifted in kitchen and made into corn bread and "mush."
[3] The variety known as the California black-eyed pea.
[4] Pressed through a cloth from canned tomatoes.
[5] Commercial wheat germ. Average of analyses of 5 samples made in division of chemistry of Hygienic Laboratory: Moisture, 10.9; protein (N×5.7), 23.9; fat, 9.4; ash, 4.3; carbohydrate (by diff.), 51.5.

A total of 34 white female insane patients came under observation for pellagra-preventive treatment with this diet. Of this group, 6 patients were under observation for periods too brief to justify their consideration in the present connection. One was under continuous observation for a year, but her treatment was suspended during a period of two and one-half months because of an intercurrent pulmonary condition requiring a different diet. This patient is of interest in the present connection, however, since she developed, at the end of about three months, a roughened condition of the skin of the forehead and nose that was suggestive of and may possibly have been pellagra. The condition was not sufficiently characterized to enable us to make a diagnosis. The remaining 27 patients were under continuous treatment and observation for a full year. None of these presented any evidence even suggestive of pellagra, although four of them had a record of 2 attacks of the disease, three of 3 attacks, five of 4 attacks, one of 6 attacks, and one of 9 attacks. Thus considering the patient presenting the suspicious but uncertain skin lesions as a case of pellagra, we had at most one recurrent attack among 28 patients during a period of 12 months. Since in the light of repeated experience it seems to us safe to state that in the absence of the wheat germ or other equivalent preventive food upward of 40 or 50 per cent of them would have suffered a recurrence within a period of from three to seven or eight months, the development of, at most, one case under the circumstances mentioned would seem convincing evidence of the preventive action of the wheat germ and thus of the presence of the pellagra-preventive factor in commercial wheat germ.

Discussion.—The demonstration that wheat germ contains the pellagra preventive (P–P) is of interest from several points of view. It is of interest in the first place in that it is in harmony with certain of our previously recorded results (2) tending to show that the substances possessing black tongue-preventive potency are also preventives of pellagra, and thus constitutes additional evidence of the soundness of our working hypothesis that black tongue of dogs is the analogue of pellagra in man (2). In this connection it may be noted that since wheat germ is one of the substances known to contain the so-called vitamin B, the demonstration that it contains the pellagra preventive is in harmony with and strengthens the view, referred to in the preceding section of this report, that substances containing the so-called vitamin B contain factor P–P.

It is of interest furthermore in that it enables us to make a direct comparison of the pellagra-preventive potency of the germ with that of the cowpeas. The daily allowance of the wheat germ was, as already remarked, the same as that of the cowpeas and, as may be

seen by comparing Tables 1 and 2 with Tables 3 and 4, the basic portion of the diet in the two studies was roughly similar. The results recorded in the foregoing indicate, however, that the wheat germ-supplemented diet was appreciably more effective so that it may be concluded that the wheat germ was, gram for gram, somewhat richer in factor P–P than was the cowpea. How much richer it is impossible to say. The demonstration is of interest finally in that it suggests the advantage of including in the dietary, particularly of those in the area of pellagra endemicity, certain of the milling products of wheat, wheat middling for example, which normally contain a considerable percentage of the germ and some of the bran.

In closing it may perhaps be well to remark that since our study was made with commercial wheat germ which contains some bran the results herein reported may, strictly speaking, have been due to either one or, more probably, to the combined action of both of these parts of the wheat kernel.

SUMMARY AND CONCLUSIONS

1. The pellagra-preventive action of the cowpea (*Vigna sinensis*) and of commercial wheat germ have been studied.
2. The pellagra-preventive factor (P–P) is present in the cowpea (and probably in the soy bean) but in relatively small amounts.
3. The pellagra-preventive factor (P–P) is present in commercial wheat germ.
4. Commercial wheat germ is probably somewhat richer in factor P–P than is the cowpea.
5. It would be advantageous to include in the dietary, particularly of those in the area of pellagra endemicity, milling products of wheat containing as high a percentage as practicable of the germ and the bran.
6. Added strength is furnished the view that foods known to contain the so-called vitamin B contain the P–P factor.
7. The experience with wheat germ constitutes evidence of the soundness of the hypothesis that black tongue of dogs is the analogue of pellagra in man.

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(4) Goldberger and Lillie: A note on an experimental pellagra-like condition in the albino rat. Pub. Health Rep., U. S. Pub. Health Serv., Wash., D. C., vol. 41, May 28, 1926, pp. 1025-1029.

(5) Goldberger and Wheeler: Unpublished data.

HEALTH CONDITIONS AND STUDENT WELFARE WORK AMONG GERMAN UNIVERSITY STUDENTS

A decree of the ministry of education of the State of Baden, Germany, dated December 4, 1924, requires that periodical medical examinations be given to the students in all public educational institutions in the State, for the purpose of providing information regarding health conditions, to facilitate the giving of proper and timely medical advice to students, to discover and to remove or ameliorate physical defects, and to combat the diseases found among the various student bodies. According to the American consul at Stuttgart, who has supplied the information, the system is at present fully operative only in Karlsruhe, having not yet been completely put in operation in the other two large Baden university centers of Freiburg and Heidelberg. It is stated that the improvement in health conditions noted recently among German university students is largely the result of the physical examinations and welfare work.

Heidelberg.—A large percentage of German students, both male and female, take an active part in sports or gymnastic exercises. The obligatory medical examinations of the students at Heidelberg in the summer of 1926 showed a considerable improvement in the health of the student body, especially among the women, who are said to consider a regular program of physical exercise a normal part of their student activities and are generally more faithful to the régime than are the men.

Among the diseases and physical defects found in the 719 students (584 males, 135 females) were the following:

	Number	Per cent
Tuberculosis (pulmonary)	3	0.4
Rheumatism	2	.3
Chronic catarrh	6	.8
Disorders of the eye (myopia, hyperopia)	49	6.0
Conjunctivitis	2	.3
Enlarged thyroid:		
Slight	88	12.3
Moderate	25	3.4
Marked	2	.3
Rhachitic teeth	14	2.0
Curvature of spine	47	6.5
Flat foot	154	21.4

A comparatively high percentage of female students (15.8 per cent) were found to have enlarged thyroid glands. Many of the cases came from North Germany. These students were given prophylactic treatments. Two new cases of pulmonary tuberculosis were discovered, and both students were sent to a sanatorium for special treatment.

Karlsruhe Superior Schools.—Of 410 students (391 males, 19 females) examined in the Karlsruhe Superior Schools, 225, or 62.4 per cent, were found to be free from all diseases and notable physical defects. In the remaining 37.6 per cent, the following were among the conditions found:

	Number	Per cent of total examined
Curvature of spine	35	8.5
Flat foot	70	17.0
Enlarged thyroid:		
Slight	116	28.0
Moderate and marked	10	2.4
Exophthalmic (Graves's sign)	1	.2
Organic heart disease	5	1.2
Functional heart disorders (6 stated to be caused by nicotine)	17	4.1
Pulmonary tuberculosis	3	.7
Diseases of the kidneys	3	.7

It is stated that some of the cases of curvature of the spine are the result of undernourishment during the war years and that others are the result of bad posture in the primary and secondary schools.

The students with enlarged thyroids are designated the "victims of regional conditions," the cause being positively traced to the lack of iodine in the diet in the locality from which these students came. The German housewives in that region have begun the use of iodized salt.

Following the examinations, one student was sent to a tuberculosis sanatorium and five students found underdeveloped or undernourished were placed under the charge of the students' social welfare committee for guidance.

In the State of Wurttemberg the University of Tuebingen has an insurance feature which is operative from the date of matriculation. This provides for financial relief in case of sickness, and a medical examination is required. The Technical College of Stuttgart, while not having the insurance system, requires that each student submit to a medical examination when he matriculates.

THE SUDAN AND THE BELGIAN CONGO BECOME MEMBERS OF THE INTERNATIONAL OFFICE

The Bulletin Mensuel for June, 1927, published by the Office International d'Hygiène publique, makes the following announcement of the adherence of the Governments of the Sudan and the Belgian Congo to the agreement of December 9, 1907, establishing the International Office:

1. In a communication dated December 9, 1926, addressed to the Government of Italy, in accordance with the provision of article 6 (of the arrangement of December 9, 1907), the Sudan Government adheres to the convention and places itself, for sharing the expenses of the office, in the fifth class, as provided for in article 11 of the organic by-laws.
2. On March 21, 1927, the Belgian Government, in accordance with the provisions of article 6, notified the Italian Government of the adherence of the Belgian Congo to the convention. The Belgian Congo places itself, for participation in the expenses of the office, in the fourth class, as provided for in article 11 of the organic by-laws.

Twelve nations ratified the agreement of December 9, 1907, creating the International Office d'Hygiène publique, but there are now 46 countries (including dominions, colonies, and protectorates) participating in the work of the office. These countries are as follows:

Algeria.
Argentine Republic.
Australia.
Belgium.
Belgian Congo.
Bolivia.
Brazil.
British India.
Bulgaria.
Canada.
Chile.
Czechoslovakia.
Denmark.
Egypt.
France.
French Africa.
French Indo-China.
Great Britain.
Greece.
Italy.
Japan.
Luxemburg (Grand Duchy of).
Madagascar.
Mexico.
Monaco (Principality of).
Morocco.
Netherlands.
Netherlands Indies.
New Zealand.
Norway.
Persia.
Peru.
Poland.
Portugal.
Rumania.
Serbs, Croats, and Slovenes (Kingdom of).
Spain.
Sweden.
Switzerland.
Sudan.
Tunis.
Turkey.
Union of Socialist Soviet Republics.
Union of South Africa.
United States of America.
Uruguay.

DEATH RATES IN A GROUP OF INSURED PERSONS

Rates for Principal Causes of Death for July, 1927

The accompanying table is taken from the Statistical Bulletin for August, 1927, published by the Metropolitan Life Insurance Co., and presents the mortality experience of the industrial department of the company for July, 1927, as compared with that for June, and for July, 1926. The rates are based on a strength of approximately 18,000,000 insured persons in the United States and Canada.

July was the seventh successive month of 1927 to register improved health conditions, as compared with the corresponding month of 1926, the death rate for July of this year being 7.8 per 1,000, as compared with 8.4 last year, a decline of 7.1 per cent. July also showed the usual seasonal drop from the death rate for the preceding month (9.2).

Each of the diseases the deaths from which are of major numerical importance registered declines from the rates for last year. Tuberculosis declined from 99.6 to 90.5 per 100,000, or 9.1 per cent; cancer from 70.1 to 65.6, or 6.4 per cent; cerebral hemorrhage from 48.9 to 46.8 or 4.3 per cent; organic heart disease from 119 to 111.5, or 6.3 per cent; pneumonia from 48.8 to 43.4, or 11.1 per cent; and Bright's disease from 62.1 to 60.3, or 2.9 per cent.

On the other hand, of the diseases listed in the accompanying table, the only ones to show higher death rates than those recorded in July of last year are typhoid fever, diphtheria, respiratory conditions other than pneumonia, and diabetes which registered a very slight increase. The increase in typhoid fever mortality is stated to be due in large part to the deaths of policyholders in the Province of Quebec, Canada. As has been the case every month so far this year, diphtheria registered a higher death rate than in the corresponding month of 1926. However, the mortality from this disease is lower this year than in any prior year except 1926, and the slight rise this year is considered an interruption that was sometime to be expected in such a remarkable decline as that which has taken place in the diphtheria death rate in recent years. Such a check occurred last year in the decline in the death rate for tuberculosis; but this check has been followed in 1927 by a more pronounced drop than ever.

Automobile fatalities again increase, the death rate for this cause being 19.7 for July, 1927, as compared with 17.5 for July last year.

Death rates (annual basis) for principal causes per 100,000 lives exposed, June and July, 1927, and July and year, 1926

[Industrial department, Metropolitan Life Insurance Co.]

Causes of death	Rate per 100,000 lives exposed [1]			
	July, 1927	June, 1927	July, 1926	Year 1926
Total, all causes	780.0	923.2	835.5	945.6
Typhoid fever	5.1	6.1	3.2	4.2
Measles	2.7	5.7	6.7	10.2
Scarlet fever	2.1	3.5	2.6	3.4
Whooping cough	6.1	6.9	8.8	9.6
Diphtheria	7.8	10.4	5.9	9.7
Influenza	6.2	12.0	9.4	31.1
Tuberculosis (all forms)	90.5	99.8	99.6	99.0
Tuberculosis of respiratory system	78.8	80.9	85.7	86.7
Cancer	65.6	74.0	70.1	73.7
Diabetes mellitus	13.7	16.9	13.3	16.7
Cerebral hemorrhage	46.8	57.5	48.0	55.6
Organic diseases of heart	111.5	138.7	119.0	134.3
Pneumonia (all forms)	43.4	69.7	48.8	98.2
Other respiratory diseases	12.1	16.7	10.8	13.0
Diarrhea and enteritis	24.5	22.0	31.7	29.8
Bright's disease (chronic nephritis)	60.3	75.5	62.1	73.5
Puerperal state	13.4	16.3	14.7	15.3
Suicides	7.9	8.6	6.9	7.7
Homicides	6.7	7.6	7.6	7.0
Other external causes (excluding suicides and homicides)	76.8	69.0	72.1	62.3
Traumatism by automobiles	19.7	19.5	17.5	16.8
All other causes	177.0	206.3	193.4	191.0

[1] All figures include infants insured under 1 year of age.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Studies of the Malaria Problem in Porto Rico. Anon. *Porto Rico Health Review*, vol. 2, No. 10, April, 1927, pp. 27 32. (Abstract by C. R. Fields.)

This is a part of malaria studies (Paper X) carried out in the island during 1924–25 by the International Health Board.

In Panama, regular extensive flights of *Anopheles* were observed in the evening and early morning, but nothing definite was learned, though certain observations seemed to indicate that possible concentrated flights occurred, which would influence malaria incidence.

In studying the habits of adult *Anopheles grabhamii*, it was found that fewer of this species were found in this region than of *Anopheles albimanus*. In 11 of the 27 night stations (40 per cent), *grabhamii* was never found at any time during the year. Of almost 400 *grabhamii* caught during the period of study, only 7 per cent were caught on human beings or dwellings at night. *Grabhamii* was also found feeding on cows, and a much higher percentage of these than *albimanus* was found on horses.

Anopheles vestitipennis were caught at half of the night stations some time during the year. All stations were in or bordering cane fields. The most *vestitipennis* were caught in the general region of bayous, but heavy breeding was also found during the wet season in temporary water deposits in cane field ditches. Possibly other breeding areas were overlooked. No observations were recorded of this mosquito biting other domestic animals than the horse.

Vestitipennis is the most active feeder of the three species, and it was found easy to keep this species alive in the laboratory for at least two weeks. It was easier to get *vestitipennis* than *albimanus* to bite human beings, and it was the hardest to induce *grabhamii* to feed on human blood. The average of night and day catches of all breeds of *Anopheles* shows the greatest rise to be in November, with a smaller rise in August.

Studies on the Bionomics of North American Anophelines. The Number of Annual Broods of A. Quadrimaculatus. Mark F. Boyd. *American Journal of Hygiene*, vol. 7, No. 3, May, 1927, pp. 264–275. (Abstract by H. B. Foote.)

Captures are expressed as "mosquitoes caught per man-hour of search," in order to give a more reasonable basis for comparing results of consecutive searches in the same territory and in comparing the prevalent density in different areas.

Data are based on catches in North Carolina and Georgia.

The author believes that few students of anophelines have given attention to the question of broods. He refers to James (James, S. P., Proc. 11th Meeting Anti-Malarial Advisory Comm., Palestine, 1925, p. 9) as the only writer whom he has found who has studied this phase of the problem.

Some Recent Experiments in Fly Control. R. J. Posson. Proceedings of the Nineteenth and Twentieth Conference of the American Association of Medical Milk Commissions and Certified Milk Producers Association of America. Pp. 322–327. (Abstract by W. D. Tiedeman.)

The experience of the United States Bureau of Dairying in controlling flies on an experimental farm at Beltsville, Md., during the years 1924 and 1925, is given in detail. House flies, which prefer horse manure as a breeding place, but breed readily in cow manure, and stable flies, which prefer damp straw or hay on which to lay eggs, but will readily lay eggs upon straw mixed with manure, had always been numerous.

In order to control breeding, all manure was hauled away at least once each week, and box stalls in which considerable straw was used were cleaned and the floors scraped regularly. The manure was either spread on fields or placed in large piles one-half mile from the buildings. Failure to remove manure on time resulted in a marked increase in flies. The author holds that the elimination of breeding places is the greatest factor in fly control.

Fly traps were also used in this work owing to the inability to eliminate all breeding places on the property and to the presence of breeding places on neighboring farms. In discussion it was brought out that experiments in liberating marked flies by the United States Department of Agriculture at Dallas, Tex., showed that the house fly traveled 11 miles in 4 to 7 days, and some were caught as far as 17 miles from the point of liberation. The length of flight indicates the necessity for using traps in addition to controlling local breeding places. Ten cylindrical fly traps similar to those described in the United States Department of Agriculture Farmer's Bulletin No. 734 were used in scattered positions. They were baited with blackstrap molasses from sugar cane, diluted with three or four parts of water. When this mixture fermented, it drew flies in large numbers. Bait was replenished about once a week. The effect of the traps could be noticed after about 10 days' use during August when flies were numerous. During 1925 the 10 traps caught 86 gallons of flies estimated by making counts to run 50,000 or 60,000 flies to the gallon.

As an added protection against flies entering the milk room, a 30-inch electric fan was operated from the porch ceiling, causing a slight air current against the screen door which proved very effective in keeping flies off the screen door and porch.

To protect cattle from horn and stable flies, a spray, made by soaking 1 pound of partially opened dried pyrethrum flowers (purchased in 20-pound lots) in 2 gallons of kerosene oil for 48 hours, was used. This is a killing spray rather than a repellent. It cost from 35 to 40 cents per gallon. It was applied by air pressure sprayer using a nozzle capable of producing a very fine vapor. Horn flies were quickly killed if caught in a cloud of vapor as they swarmed after the first spray struck them. While horn flies lay their eggs in fresh droppings, their number was appreciably reduced after a week of daily spraying. Stable flies were killed

by spraying them as they were found sucking blood on the cows legs. Stable flies were much harder to control, however. Care should be exercised not to wet the cattle unnecessarily with the spray, as the kerosene is irritating. When this spray was used one hour before milking no difficulties were experienced in causing odors or tastes in the milk.

Results of this fly-control work are reported as satisfactory. No statement is given as to the total cost of control. There was considerable discussion of this paper.

The Public Health (Meat) Regulations, 1924. Brennan DeVine. *Journal of the Royal Sanitary Institute*, vol. 47, No. 11, May, 1927, pp. 654 668. (Abstract by L. M. Fisher.)

Regulations should be made to include dressed poultry and rabbits, canned foods, and made-up foods. Of 100 cases of food poisoning, 42 were due to canned foods, 15 to made-up foods, and only 6 to fresh meat.

The removal of the gutscraping and tripe cleaning from the actual slaughtering compartment lessens the chances of the meat becoming infected with fecal contents of the bowels. Such infection has in the past caused cases of meat poisoning. Meat sold from barrows in the streets should be kept behind glass, as well as meat exposed for sale in shops. Illicit slaughtering, carried on principally by small farmers, and nonnotification of diseased carcasses should be made serious offenses. The ministry of health should require all local authorities to enforce the meat regulations in their entirety.

Fifteen Years of Milk Control in the Oranges, New Jersey. F. J. Osborne, health officer, East Orange, N. J. *The Nation's Health*, vol. 9, No. 3, March 15, 1927, pp. 26 28. (Abstract by Ralph E. Irwin.)

As soon as a full time health officer was employed in the city of Orange, a survey was made of the milk situation. This resulted in the adoption of a milk ordinance and the establishment of inspection and laboratory control. This work resulted in such marked improvement that four other nearby municipalities joined with the city of Orange and formed the Milk Inspection Association of the Oranges. The adoption of uniform milk regulations and centralized control received the support of the producers and distributors of milk. To the milk dealers it meant "first, that the ignorant, careless, and indifferent dealers have been eliminated, and, second, that those remaining as survivors are able, by virtue of the strength of their position and the profit from the business, to maintain high sanitary standards, and, too, in great part, control their supplies themselves."

To the consumer this association means efficient administration, a safe and sanitary milk supply, and a sensible expenditure of public funds.

Oyster Producing Waters and Shellfish Sanitation in Relation to State and United States Certification Procedure. Elliot H. Gage. Proceedings of the Ninth Texas Water Works Short School. Pp. 281-284. (Abstract by Chester Cohen.)

The principal oyster producing waters in Texas are given, together with an account of the typical growths and occurrences in these areas. It is estimated that there are 119,000 acres actually in condition to produce oysters on the coast of Texas. The influencing factors and life habits of the oyster are given. The possibility of contamination through the habitat and method of taking food is brought out. A short history of shellfish sanitation is included, together with the most recent developments in this field. A summarized report of the committee on shellfish sanitation is included. The importance of certification is especially stressed, inasmuch as certification carries with it the adequate inspection, supervision, and regulation of the industry.

Imhoff Tank Gases and Odors. **William D. Hatfield.** ***Public Works*, vol. 58, No. 6, June 1927, pp. 204–206. (Abstract by M. S. Foreman.)**

The odor situation at the sewage plant at Decatur, Ill., has been serious on account of the strength and temperature of the sewage received. A large volume of condensed water comes from a starch plant, the temperature of which varies from 70° F. in winter to 104° F. in summer. The strength of the sewage varies from 500 to 1,000 p. p. m. of biochemical oxygen demand. The high temperature, combined with strong sewage makes ideal conditions for bacterial reduction, and are responsible for the odoriferous condition.

In 1924, a careful analysis of the odor situation was begun when the sewage plant was started. Analyses were made of the air and gases about the plant, to determine the hydrogen sulphide content. The major odors were found to be caused by (1) sewer gases coming from entrance to grit chamber; (2) turbulent sewage at outlet of grit chamber; (3) turbulent effluent from Imhoff tanks; (4) digestion gases from Imhoff tanks; (5) from sprays and stones of sprinkling filters. The quantity of sulphide in the digestion gases at Decatur is a function of the temperature and is shown in a table.

The total gas production was determined by covering one of the Imhoff tanks at the water level with a sloping wooden structure resembling the Imhoff collector. The volume of gas produced was found to be dependent on the temperature of the sludge digestion. The odoriferous condition about the plant is now practically eliminated when the Imhoff gases are burned. This is accomplished by means of a suction fan built so as to force the trapped gases into a red-hot oven.

Sewage Filtrate as a Source of Bacteriophage. Janet Anderson Caldwell. *Journal of Infectious Diseases*, vol. 40, No. 5, May, 1927, pp 575 578. (Abstract by L. M. Fisher.)

The adaptation of a bacteriophage strain to a nonsusceptible organism is often tedious and unsuccessful. Adapted bacteriophage is probably inferior to one which is active when isolated. Active bacteriophage seems to be ubiquitous but difficult of isolation.

Sewage filtrate obtained by filtering city sewage twice through Berkfeld filters yielded a clear, colorless, and usually odorless fluid, which was found to be a much better source of virulent antityphoid and antidysentery bacteriophage than the excreta of typhoid patients

Sewage filtrate yields a potent bacteriophage for practically all strains of *B. coli* isolated from urinary infections; and its use as a source of bacteriophage will materially increase the number of urinary infections that can be treated with the bacteriophage, and will avoid confusion in the identification of resistant strains of bacteria.

Distribution of Cellulose in Imhoff Tanks. H. Heukelekian. *Public Works*, vol. 58, No. 4, April, 1927, pp. 133 -135. (Abstract by A. S. Bedell.)

This is a preliminary report on the cellulose content and distribution in fresh sewage solids of an Imhoff tank at Plainfield, N. J. The solids were collected by suspending pails for 24 hours in the flowing through compartment at the inlet, middle portion, and outlet. Samples from each point and from the mixture of the three portions were analysed. A table is given showing results of solids concentration, volatile matter, and cellulose contents. A selective settling is indicated and, in view of the relation of cellulose to CO_2 production, the efficiency of the tank would be greatly affected by the design and the opportunity for reversal of flow.

DEATHS DURING WEEK ENDED SEPTEMBER 17, 1927

Summary of information received by telegraph from industrial insurance companies for week ended September 17, 1927, and corresponding week of 1926. (From the Weekly Health Index, September 21, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Sept. 17, 1927	Corresponding week 1926
Policies in force	68, 711, 839	65, 301, 677
Number of death claims	12, 180	11, 485
Death claims per 1,000 policies in force, annual rate	9. 2	9. 2

Deaths from all causes in certain large cities of the United States during the week ended September 17, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, September 21, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Sept. 17, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Sept. 17, 1927 [2]
	Total deaths	Death rate [1]		Week ended Sept. 17, 1927	Corresponding week 1926	
Total (67 cities)	6, 281	11. 1	[3] 10. 9	744	[3] 848	[4] 59
Akron	29			3	1	32
Albany [5]	33	14 3	11. 4	4	2	83
Atlanta	76			15	9	
White	45			7	3	
Colored	31	(6)		8	6	
Baltimore [5]	213	13. 6	12. 3	25	25	77
White	156		10 7	16	19	62
Colored	57	(6)	21 5	9	6	140
Birmingham	63	15 3	12 1	8	11	
White	39		11 0	6	4	
Colored	24	(6)	13 8	2	7	
Boston	174	11. 4	10 6	29	20	81
Bridgeport	29			4	3	74
Buffalo	105	10 0	11 7	16	10	67
Cambridge	19	8. 0	7. 7	3	2	53
Camden	29	11 4	7. 2	3	6	52
Canton	17	7 8	9 5	2	5	47
Chicago [5]	645	10 8	10 4	79	91	68
Cincinnati	118	14. 9	14. 5	15	19	94
Cleveland	160	8. 5	9 6	24	17	64
Columbus	83	14. 9	10 8	11	9	102
Dallas	56	14. 0	12. 3	10	11	
White	41		12 7	7	8	
Colored	15	(6)	9. 7	3	3	
Dayton	38	11 0	11. 2	4	9	66
Denver	71	12 8	13 7	16	11	
Des Moines	34	11. 9	9 6	2	5	33
Detroit	239	9. 3	10. 2	45	50	71
Duluth	21	9. 5	10. 2	2	1	43
El Paso	34	15. 6	12. 0	7	5	
Erie	28			2	2	89
Fall River [5]	26	10. 2	8. 8	7	4	124
Flint	31	11. 3	11. 1	8	13	131
Fort Worth	35	11. 1	7 2	8	4	
White	27		6. 0	6	3	
Colored	8	(6)	16. 5	2	1	
Grand Rapids	35	11. 5	10. 7	4	6	59
Houston	47			5	8	
White	28			4	5	
Colored	19	(6)		1	3	
Indianapolis	101	14. 1	11. 5	8	18	63
White	82		11 1	6	16	54
Colored	19	(6)	14. 2	2	2	122
Jersey City	55	8. 9	9. 2	12	5	90
Kansas City, Kans	30	13. 4	11. 6	3	4	58
White	26		10. 8	1	3	22
Colored	4	(6)	15. 3	2	1	304
Kansas City, Mo	101	13. 8	15. 2	8	13	
Knoxville	29	14. 8		6		
White	23			5		
Colored	6	(6)		1		

Footnotes on p. 2400.

Deaths from all causes in certain large cities of the United States during the week ended September 17, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926—Continued

City	Week ended Sept. 17, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Sept. 17, 1927 [2]
	Total deaths	Death rate [1]		Week ended Sept. 17, 1927	Corresponding week 1926	
Los Angeles	251			18	15	52
Louisville	65	10.6	14.3	3	17	26
White	47		12.2	3	13	29
Colored	18	(6)	25.5	0	4	0
Lowell	21	9.9	12.3	1	3	19
Lynn	27	13.4	14.0	1	4	26
Memphis	78	22.7	18.3	11	7	
White	47		14.2	8	4	
Colored	31	(6)	25.7	3	3	
Milwaukee	100	9.8	8.3	10	7	47
Minneapolis	78	9.2	9.0	9	9	51
Nashville [5]	42	15.9	20.6	3	6	
White	26		18.6	2	4	
Colored	16	(6)	25.4	1	2	
New Bedford	21	9.2	10.9	1	6	17
New Haven	29	8.2	6.0	5	6	70
New Orleans	154	18.9	19.3	18	20	
White	80		14.6	9	9	
Colored	74	(6)	32.5	9	11	
New York	1,200	10.5	9.9	122	132	50
Bronx Borough	144	8.1	8.1	9	12	29
Brooklyn Borough	397	9.1	8.9	50	51	52
Manhattan Borough	507	14.6	13.3	54	53	63
Queens Borough	115	7.4	7.4	8	13	34
Richmond Borough	37	13.1	9.1	1	8	19
Newark, N. J	81	9.1	11.7	10	17	50
Oakland	64	12.5	10.4	4	8	47
Oklahoma City	31			5	2	
Omaha	60	14.3	16.2	4	7	44
Paterson	26	9.4	8.4	1	5	18
Philadelphia	372	9.5	10.4	49	59	65
Pittsburgh	134	10.9	12.1	22	29	77
Portland, Oreg	47			4	2	42
Providence	53	9.8	10.6	7	9	59
Richmond	48	13.0	14.1	5	12	66
White	31		11.7	1	5	20
Colored	17	(6)	19.9	4	7	152
Rochester	66	10.6	8.0	10	3	84
St. Louis	216	13.4	11.2	17	16	
St. Paul	54	11.3	11.8	2	3	18
Salt Lake City [5]	25	9.6	11.0	2	4	30
San Antonio	35	8.6	15.3	5	14	
San Diego	36	16.3	17.5	4	0	85
San Francisco	117	10.6	10.4	3	3	19
Schenectady	20	11.2	6.7	2	1	60
Seattle	70			2	2	21
Somerville	17	8.7	9.4	1	1	36
Spokane	28	13.4	14.4	0	4	0
Springfield, Mass	28	9.9	10.8	1	0	15
Syracuse	34	9.0	14.4	6	6	77
Tacoma	18	8.8	7.4	1	1	24
Toledo	79	13.6	9.2	7	9	67
Trenton	45	17.1	9.7	10	2	174
Washington, D. C	119	11.5	11.8	10	15	58
White	70		10.3	3	9	25
Colored	49	(6)	16.0	7	6	129
Waterbury	20			0	3	0
Wilmington, Del	21	8.7	11.4	2	5	50
Worcester	32	8.6	11.1	3	11	36
Yonkers	13	5.7	7.2	1	1	23
Youngstown	30	9.3	8.2	2	5	28

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 66 cities.
[4] Data for 62 cities.
[5] Deaths for week ended Friday, Sept. 16, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended September 24, 1927

DIPHTHERIA	Cases
Alabama	64
Arkansas	12
California	61
Colorado	16
Connecticut	17
Delaware	2
Florida	28
Georgia	41
Idaho	2
Illinois	88
Indiana	10
Iowa [1]	23
Kansas	39
Louisiana	48
Maine	5
Maryland [1]	23
Michigan	52
Minnesota	27
Mississippi	29
Missouri	24
Nebraska	1
New Jersey	102
New Mexico	10
New York [2]	59
North Carolina	75
Oklahoma [3]	99
Oregon	9
Pennsylvania	107
Rhode Island	7
South Carolina	88
South Dakota	4
Tennessee	36
Texas	30
Utah [1]	7
Washington	12
West Virginia	26
Wisconsin	39

[1] Week ended Friday.
[2] Exclusive of New York City.
[3] Exclusive of Oklahoma City and Tulsa.

INFLUENZA	Cases
Alabama	13
Arkansas	9
California	5
Connecticut	1
Florida	4
Georgia	17
Illinois	3
Indiana	14
Louisiana	6
Maryland [1]	8
Mississippi	3
Missouri	3
Nebraska	1
New Jersey	3
Oklahoma [3]	19
Oregon	5
South Carolina	258
Tennessee	8
Texas	1
West Virginia	10
Wisconsin	6

MEASLES	
Alabama	21
Arkansas	3
California	36
Colorado	3
Connecticut	3
Delaware	3
Florida	1
Georgia	8
Illinois	26
Indiana	11
Iowa [1]	1
Kansas	33
Louisiana	5
Maine	7

[1] Week ended Friday.
[3] Exclusive of Oklahoma City and Tulsa.

MEASLES—continued

	Cases
Maryland [1]	11
Michigan	13
Minnesota	4
Missouri	2
Montana	2
Nebraska	2
New Jersey	5
New Mexico	9
New York [2]	30
North Carolina	75
Oklahoma [3]	8
Oregon	8
Pennsylvania	19
South Carolina	53
Tennessee	14
Texas	5
Washington	27
West Virginia	24
Wisconsin	73
Wyoming	7

MENINGOCOCCUS MENINGITIS

	Cases
Alabama	2
California	4
Connecticut	2
Illinois	4
Iowa [1]	2
Maryland [1]	1
Michigan	1
Minnesota	4
Mississippi	1
Missouri	1
New Jersey	3
North Carolina	2
Oklahoma [3]	1
Oregon	1
Pennsylvania	1
Tennessee	1
Washington	2
West Virginia	1
Wisconsin	6

POLIOMYELITIS

	Cases
Alabama	2
Arizona	2
Arkansas	1
California	43
Colorado	4
Connecticut	12
Florida	1
Illinois	42
Iowa [1]	5
Kansas	19
Louisiana	1
Maine	15
Maryland [1]	2
Michigan	24
Minnesota	8
Missouri	23
Nebraska	8
New Jersey	37
New Mexico	19
New York [2]	18
Oklahoma [3]	10
Oregon	21

[1] Week ended Friday.
[2] Exclusive of New York City.
[3] Exclusive of Oklahoma City and Tulsa.

POLIOMYELITIS—continued

	Cases
Pennsylvania	42
Rhode Island	4
South Carolina	4
South Dakota	2
Tennessee	4
Texas	25
Utah [1]	4
Vermont	1
Virginia	1
Washington	11
West Virginia	18
Wisconsin	14
Wyoming	1

SCARLET FEVER

	Cases
Alabama	11
Arizona	1
Arkansas	4
California	75
Colorado	22
Connecticut	18
Delaware	4
Florida	6
Georgia	11
Idaho	4
Illinois	78
Indiana	54
Iowa [1]	11
Kansas	46
Louisiana	10
Maine	17
Maryland [1]	22
Michigan	57
Minnesota	48
Mississippi	12
Missouri	32
Montana	6
Nebraska	12
New Jersey	45
New Mexico	5
New York [2]	71
North Carolina	40
Oklahoma [3]	16
Oregon	5
Pennsylvania	167
Rhode Island	10
South Carolina	22
South Dakota	10
Tennessee	14
Texas	18
Utah [1]	4
Vermont	2
Washington	18
West Virginia	36
Wisconsin	66
Wyoming	4

SMALLPOX

	Cases
Alabama	4
California	10
Colorado	1
Idaho	1
Illinois	17
Indiana	15

[1] Week ended Friday.
[2] Exclusive of New York City.
[3] Exclusive of Oklahoma City and Tulsa.

SMALLPOX—continued

State	Cases
Iowa [1]	4
Louisiana	1
Michigan	12
Missouri	4
Montana	3
New York [2]	2
North Carolina	13
Oklahoma [3]	3
Oregon	5
South Carolina	2
South Dakota	5
Tennessee	11
Texas	6
Utah [1]	17
Virginia	1
Washington	5
West Virginia	9
Wisconsin	16
Wyoming	1

TYPHOID FEVER

State	Cases
Alabama	57
Arizona	8
Arkansas	66
California	19
Colorado	15
Connecticut	9
Delaware	5
Florida	10
Georgia	44
Idaho	1

[1] Week ended Friday.
[2] Exclusive of New York City.
[3] Exclusive of Oklahoma City and Tulsa.

TYPHOID FEVER—continued

State	Cases
Illinois	45
Indiana	34
Iowa [1]	3
Kansas	25
Louisiana	31
Maine	13
Maryland [1]	38
Michigan	8
Minnesota	4
Mississippi	11
Missouri	32
Montana	1
Nebraska	1
New Jersey	26
New Mexico	14
New York [2]	31
North Carolina	23
Oklahoma [3]	110
Oregon	10
Pennsylvania	36
Rhode Island	1
South Carolina	78
South Dakota	3
Tennessee	70
Texas	23
Utah [1]	4
Washington	7
West Virginia	59
Wisconsin	8
Wyoming	4

[1] Week ended Friday.
[2] Exclusive of New York City.
[3] Exclusive of Oklahoma City and Tulsa.

Reports for week ended September 17, 1927

DIPHTHERIA

State	Cases
District of Columbia	15
North Dakota	6

MEASLES

State	Cases
District of Columbia	1
North Dakota	5

POLIOMYELITIS

State	Cases
North Dakota	1

SCARLET FEVER

State	Cases
District of Columbia	7
North Dakota	15

TYPHOID FEVER

State	Cases
District of Columbia	1
North Dakota	2

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
July, 1927										
Pennsylvania	9	703		2	1,316	4	8	855	11	157
August, 1927										
Arkansas	0	13	46	995	50	253	4	9	11	192
Georgia	1	84	91	272	21	39	3	55	7	330
Iowa	8	42			16		9	45	37	29
Louisiana	0	77	40	348	13	71	6	28	3	167
Massachusetts	5	216	21	1	253	3	176	349	0	69
Minnesota	9	119	3		32		12	195	0	32
New Jersey	2	274	12	4	36		79	133	0	58
Ohio	9	323	19	3	51		271	299	21	168
South Carolina	0	221	478	2,359	218	501	5	51	38	427
Vermont	0	12			58		0		0	2
West Virginia	4	53	7		31		35	109	47	157
Wyoming	0	1			11		2	10	0	3

July, 1927

Pennsylvania:	Cases
Anthrax	1
Chicken pox	934
German measles	119
Impetigo contagiosa	4
Lethargic encephalitis	8
Mumps	733
Ophthalmia neonatorum	5
Puerperal fever	6
Tetanus	11
Whooping cough	1,033

August, 1927

Anthrax:	
New Jersey	1
Chicken pox:	
Arkansas	36
Georgia	4
Iowa	12
Louisiana	3
Massaschusetts	72
Minnesota	54
New Jersey	65
Ohio	114
South Carolina	33
Vermont	13
West Virginia	3
Wyoming	5
Conjunctivitis:	
Georgia	1
Dengue:	
Georgia	5
South Carolina	36
Dysentery:	
Georgia	22
Louisiana	1
Massachusetts	5
Minnesota	4
New Jersey	4
Ohio	2
German measles:	
Iowa	2
Massachusetts	8
New Jersey	15
Ohio	3
Wyoming	2
Hookworm disease:	
Arkansas	1
Georgia	12
Louisiana	7
South Carolina	123
Lead poisoning:	
Massachusetts	8
New Jersey	6
Ohio	7
Lethargic encephalitis:	
Louisiana	4
Massachusetts	12
Ohio	4
Mumps:	
Arkansas	168
Georgia	16
Iowa	9
Louisiana	1
Massachusetts	145

August, 1927—Continued

Mumps—Continued.	Cases
Ohio	147
Vermont	45
Wyoming	4
Ophthalmia neonatorum:	
Arkansas	2
Massachusetts	152
New Jersey	2
Ohio	117
South Carolina	20
Paratyphoid fever:	
Georgia	4
Louisiana	2
New Jersey	13
Ohio	2
South Carolina	23
Wyoming	1
Puerperal fever:	
Ohio	2
Rabies in animals:	
South Carolina	10
Vermont	1
Rabies in man:	
Georgia	1
Ohio	2
Rocky Mountain spotted or tick fever:	
Wyoming	1
Septic sore throat:	
Georgia	26
Massachusetts	9
Ohio	50
Tetanus:	
Georgia	1
Iowa	1
Louisiana	3
Massachusetts	2
Minnesota	3
Ohio	2
Trachoma:	
Arkansas	10
Georgia	1
Louisiana	1
Massachusetts	3
New Jersey	1
Ohio	1
Tularaemia:	
Minnesota	1
Wyoming	2
Typhus fever:	
Georgia	1
Whooping cough:	
Arkansas	104
Georgia	48
Iowa	64
Louisiana	25
Massachusetts	365
Minnesota	53
New Jersey	554
Ohio	529
South Carolina	267
Vermont	21
West Virginia	79
Wyoming	21

Number of Cases of Certain Communicable Diseases Reported for the Month of June, 1927, by State Health Officers

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Alabama	65	65	820	44	35	97	447	210	225
Arizona	5	16	162	32	30	0	76	17	9
Arkansas	132	16	264	112	15	23	49	131	222
California	1,222	511	2,966	715	672	79	995	62	914
Colorado	96	106	546	15	386	15	126	19	47
Connecticut	469	138	252	167	277	0	165	5	98
Delaware	12	6	20	1	10	0	5	3	2
District of Columbia	52	54	15		65	30	126	5	39
Florida	19	57	200	15	21	165	129	86	140
Georgia	40	32	246	83	42	56	61	234	135
Idaho	18	7	163	12	25	34	[1] 7	8	25
Illinois	873	475	2,084	1,453	806	63	1,362	70	1,089
Indiana [2]									
Iowa	92	63	458	84	115	91	77	4	73
Kansas	217	35	1,253	67	169	74	197	31	389
Kentucky [3]									
Louisiana	19	60	293	26	15	27	[1] 197	116	112
Maine	59	9	339	18	88	0	26	9	129
Maryland	300	232	81	79	160	5	302	44	350
Massachusetts	874	388	1,734	1,044	1,587	0	594	18	406
Michigan	820	334	900	927	921	151	532	29	613
Minnesota	773	94	341		474	10	377	18	71
Mississippi	249	38	856	330	21	10	284	237	1,737
Missouri	94	106	487	294	175	95	146	38	330
Montana	43	6	71	3	62	45	36	7	54
Nebraska	49	37	317	66	74	38	20	5	35
Nevada [4]									
New Hampshire		2			34			3	
New Jersey	1,197	431	196		816	1	446	20	677
New Mexico [2]									
New York	2,556	1,875	3,699	2,056	2,208	18	1,425	91	1,382
North Carolina	247	53	4,974		49	94		151	2,204
North Dakota	33	8	117	3	89	6	5	2	15
Ohio	6,706	388	467	670	750	197	701	50	576
Oklahoma [5]	41	24	875	19	43	161	88	153	68
Oregon	74	24	618	59	45	69	38	24	74
Pennsylvania	1,306	645	1,865	1,321	1,276	2	784	78	652
Rhode Island	71	48	30	23	107	0	40	0	22
South Carolina	214	55	824	14	13	35	157	378	661
South Dakota	19	13	142	2	73	25	7	10	21
Tennessee	65	21	197	27	47	54	186	247	282
Texas [3]									
Utah [3]									
Vermont	107	4	335	141	30	0	17	1	125
Virginia	328	56	1,249		82	54	118	111	1,331
Washington	265	45	1,714	150	173	145	115	20	146
West Virginia	70	43	564		115	133	80	46	150
Wisconsin	775	113	2,473	786	422	73	172	14	393
Wyoming	9	1	161	2	38	7			27

[1] Pulmonary.
[2] Report not received at time of going to press.
[3] Reports received weekly.
[4] Reports received annually.
[5] Exclusive of Oklahoma City and Tulsa.

Case Rates per 1,000 Population (Annual Basis) for the Month of June, 1927

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Alabama	0.31	0.31	3.91	0.21	0.17	0.46	2.13	1.00	1.07
Arizona	.13	.42	4.29	.85	.80	.00	2.01	.45	.24
Arkansas	.84	.10	1.67	.71	.09	.15	.31	.83	1.40
California	3.35	1.40	8.14	1.96	1.84	.22	2.73	.17	2.51
Colorado	1.09	1.20	6.19	.17	4.37	.17	1.43	.22	.53
Connecticut	3.49	1.03	1.87	1.24	2.06	.00	1.23	.04	.73
Delaware	.60	.30	1.00	.05	.50	.00	.25	.15	.10
District of Columbia	1.17	1.22	34		1.46	.68	2.84	.11	.88
Florida	.17	.51	1 79	.13	.19	1.47	1.15	.77	1.25
Georgia	.15	.12	.94	.32	.16	.21	.23	.90	.52
Idaho	.41	.16	3.71	.27	.57	.77	[1] .16	.18	.57
Illinois	1.46	.79	3.48	2.42	1.34	.11	2.27	.12	1.82
Indiana [2]									
Iowa	.46	.32	2.30	.42	.58	.46	.39	.02	.37
Kansas	1.44	.23	8.34	.45	1.12	.49	1.31	.21	2.59
Kentucky [3]									
Louisiana	.12	.38	1.84	.16	.09	.17	[1] 1.24	.73	.70
Maine	.91	.14	5.20	.28	1.35	.00	.40	.14	1.98
Maryland	2.29	1.77	.62	.60	1.22	.04	2.30	.34	2.67
Massachusetts	2.51	1.11	4.97	2.99	4.55	.00	1.70	.05	1.16
Michigan	2.22	.91	2.44	2.51	2.50	.41	1.44	.08	1.66
Minnesota	3.50	.43	1.54		2.15	.05	1.71	.08	.32
Mississippi	1.69	.26	5 82	2.24	.14	.07	1.93	1.61	11.80
Missouri	.33	.37	1.69	1.02	.61	.33	.51	.13	1.14
Montana	.73	.10	1.21	.05	1.06	.77	.61	.12	.92
Nebraska	.43	.32	2.76	.58	.64	.33	.17	.04	.31
Nevada [4]									
New Hampshire		.05			.91			.08	
New Jersey	3.88	1.40	.64		2.65	.00	1.45	.06	2.20
New Mexico [2]									
New York	2.72	2.00	3.94	2.19	2.35	.02	1.52	.10	1.47
North Carolina	1 04	.22	20.89		.21	.39		.63	9.26
North Dakota	.63	.15	2.22	.06	1.69	.11	.09	.04	.28
Ohio	12.16	.70	.85	1.21	1.36	.36	1.27	.09	1.04
Oklahoma [5]	.23	.14	5.01	.11	.25	.92	.50	.88	.39
Oregon	1.01	.33	8.45	.81	.62	.94	.52	.33	1.01
Pennsylvania	1.63	.81	2.33	1.65	1.60	.00	.98	.10	.82
Rhode Island	1.23	.83	.52	.40	1.85	.00	.69	.00	.38
South Carolina	1.41	.36	5.43	.09	.09	.23	1.04	2.49	4.36
South Dakota	.33	.23	2.48	.03	1.28	.44	.12	.17	.37
Tennessee	.32	.10	.96	.13	.23	.26	.91	1.21	1.38
Texas [3]									
Utah [3]									
Vermont	3.69	.14	11.56	4.87	1.04	.00	.59	.03	4.32
Virginia	1.57	.27	5.97		.39	.26	.56	.53	6.36
Washington	2.06	.35	13.35	1.17	1.35	1.13	.90	.16	1.14
West Virginia	.50	.31	4.05		.83	.95	.57	.33	1.08
Wisconsin	3.23	.47	10.31	3.28	1.76	.30	.72	.06	1.64
Wyoming	.45	.05	8.13	.10	1.92	.35			1.36

[1] Pulmonary.
[2] Report not received at time of going to press.
[3] Reports received weekly.
[4] Reports received annually.
[5] Exclusive of Oklahoma City and Tulsa.

RECIPROCAL NOTIFICATIONS

Notifications regarding communicable diseases sent during the month of August 1927, to other State health departments by departments of health of certain States

Referred by—	Diphtheria	Dysentery	Poliomyelitis	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
California						2		
Illinois				1	6	21	7	1
Minnesota	1	3				21	1	
New York	1		1	1	1		5	
Washington	1							

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 94 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,110,000. The estimated population of the 89 cities reporting deaths is more than 29,470,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended September 10, 1927, and September 11, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
42 States	1,306	965	
94 cities	531	428	556
Measles:			
41 States	613	754	
94 cities	112	155	
Poliomyelitis			
42 States	504	137	
Scarlet fever			
42 States	1,131	903	
94 cities	304	325	304
Smallpox			
42 States	133	155	
94 cities	20	7	18
Typhoid fever			
42 States	1,138	1,488	
94 cities	172	259	220
Deaths reported			
Influenza and pneumonia			
89 cities	378	304	
Smallpox:			
89 cities	0	0	

City reports for week ended September 10, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	0	1	1	0	0	1	1	2
New Hampshire:									
Concord	22,546	0	0	0	0	0	0	0	0
Manchester	83,097	0	2	0	0	0	0	0	1
Vermont:									
Barre	10,008	0	0	2	0	0	0	0	0
Burlington	24,089	0	0	0	0	0	1	0	1

City reports for week ended September 10, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND—con.									
Massachusetts.									
Boston	779,620	6	28	24	1	1	22	2	17
Fall River	128,993	0	1	0	0	0	0	0	1
Springfield	142,065	0	1	1	0	0	0	1	0
Worcester	190,757	0	4	1	0	0	0	0	0
Rhode Island.									
Pawtucket	69,760	0	0	0	0	0	0	0	0
Providence	267,918	0	3	5	0	0	0	0	2
Connecticut:									
Bridgeport	(1)	-------	4	-------	-------	-------	-------	-------	-------
Hartford	160,197	0	4	0	0	1	0	1	2
New Haven	178,927	0	2	1	0	0	3	0	2
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	2	11	14	-------	1	1	1	4
New York	5,873,356	11	82	97	4	3	7	7	65
Rochester	316,786	0	4	3	-------	0	0	2	2
Syracuse	182,003	0	4	1	-------	0	5	1	1
New Jersey.									
Camden	128,642	0	2	14	0	0	0	0	2
Newark	452,513	3	6	7	1	0	2	5	11
Trenton	132,020	0	3	2	0	0	0	0	7
Pennsylvania:									
Philadelphia	1,979,364	4	33	31	-------	1	0	10	28
Pittsburgh	631,563	2	12	12	-------	2	16	3	15
Reading	112,707	0	2	2	-------	0	1	1	0

[1] No estimate made.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	0	7	4	0	0	2	0	7
Cleveland	936,485	11	22	37	1	0	4	12	6
Columbus	279,836	1	3	2	0	1	0	0	5
Toledo	287,380	3	7	4	1	0	1	0	2
Indiana:									
Fort Wayne	97,846	0	2	1	0	0	0	0	0
Indianapolis	358,819	2	5	5	0	0	0	4	5
South Bend	80,091	0	1	0	0	0	0	0	0
Terre Haute	71,071	0	0	1	0	0	0	0	1
Illinois:									
Chicago	2,995,239	22	50	45	5	2	4	12	34
Springfield	63,923	2	1	0	1	0	0	0	1
Michigan:									
Detroit	1,245,824	5	39	19	1	1	3	3	14
Flint	130,316	0	5	5	0	1	1	0	2
Grand Rapids	153,698	0	2	3	0	0	3	0	4
Wisconsin:									
Kenosha	50,891	1	0	0	0	0	0	1	0
Madison	46,385	1	1	0	0	0	1	0	0
Milwaukee	509,192	4	8	11	1	1	4	12	8
Racine	67,707	2	1	1	0	0	1	0	1
Superior	39,671	0	1	1	0	0	0	0	1
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	0	1	0	0	0	0	0	0
Minneapolis	425,435	8	17	7	0	0	0	0	5
St. Paul	246,001	0	13	1	0	0	2	0	5
Iowa:									
Davenport	52,469	0	1	2	0	-------	0	0	-------
Des Moines	141,441	0	3	3	0	-------	0	0	3
Sioux City	76,411	0	1	0	0	-------	1	0	-------
Waterloo	36,771	0	0	1	0	-------	1	0	-------
Missouri:									
Kansas City	367,481	1	3	3	0	0	0	1	5
St. Joseph	78,342	1	1	0	0	0	0	0	1
St. Louis	821,543	2	21	16	0	0	1	4	-------

[1] No estimate made.

City reports for week ended September 10, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
WEST NORTH CENTRAL—continued									
North Dakota:									
Fargo	26,403	0	0	0	0	0	0	0	0
Grand Forks	14,811	0	0	0	0	-------	0	0	-------
South Dakota:									
Aberdeen	15,036	0	0	0	0	-------	0	0	-------
Sioux Falls	30,127	0	0	0	0	-------	0	0	-------
Nebraska:									
Lincoln	60,941	0	0	0	0	0	0	1	1
Omaha	211,768	0	10	2	0	0	0	0	3
Kansas:									
Topeka	55,411	0	0	0	0	0	0	1	1
Wichita	88,367	1	1	2	0	0	0	0	1
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	0	1	0	0	0	0	0	1
Maryland:									
Baltimore	796,296	2	14	26	3	0	1	1	7
Cumberland	33,741	0	1	0	0	0	0	0	0
Frederick	12,035	2	0	0	0	0	0	0	0
District of Columbia:									
Washington	497,906	0	5	6	0	0	0	0	5
Virginia:									
Lynchburg	30,395	0	1	2	0	0	0	0	1
Norfolk	(1)	1	0	0	0	0	0	0	1
Richmond	186,403	0	11	4	0	1	0	0	0
Roanoke	58,208	0	3	3	0	0	0	0	1
West Virginia:									
Charleston	49,019	0	2	0	0	0	0	-------	-------
Wheeling	56,208	0	1	0	0	0	1	0	1
North Carolina:									
Raleigh	30,371	0	2	2	0	1	1	0	0
Wilmington	37,061	0	1	0	0	0	0	0	1
Winston-Salem	69,031	1	2	3	0	0	2	5	0
South Carolina:									
Charleston	73,125	0	1	0	20	0	0	0	0
Columbia	41,225	0	1	2	0	1	3	0	1
Greenville	27,311	0	1	0	0	0	0	0	0
Georgia:									
Atlanta	(1)	0	5	7	3	1	0	1	4
Brunswick	16,809	0	0	0	0	0	0	0	0
Savannah	93,134	0	1	1	5	0	0	0	3
Florida:									
Miami	69,754	0	-------	3	0	0	0	1	0
St. Petersburg	26,847	-------	0	-------	-------	0	-------	-------	0
Tampa	94,743	0	1	4	0	0	0	0	2
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	0	2	0	0	0	0	1
Lexington	46,895	0	-------	0	0	0	1	0	2
Louisville	305,935	1	5	0	1	0	0	2	8
Tennessee:									
Memphis	174,533	0	4	5	0	1	1	1	3
Nashville	136,220	2	2	6	0	1	1	0	4
Alabama:									
Birmingham	205,670	0	4	5	2	0	0	1	3
Mobile	65,955	0	1	0	0	0	0	0	3
Montgomery	46,481	0	1	3	0	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	0	0	0	0	-------	0	1	-------
Little Rock	74,216	0	0	0	0	0	2	1	6
Louisiana:									
New Orleans	414,493	0	7	11	3	3	0	0	0
Shreveport	57,857	0	1	2	0	0	0	2	1

[1] No estimate made.

City reports for week ended September 10, 1927—**Continued**

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
WEST SOUTH CENTRAL—continued									
Oklahoma									
Oklahoma City	(1)	0	2	2	6	1	0	0	5
Tulsa	124,478	0	....	0	0	....	0	0	....
Texas:									
Dallas	194,450	....	4	....	....	....	....	....	....
Galveston	48,375	0	0	0	0	0	0	0	0
Houston	164,954	0	3	2	0	0	0	0	2
San Antonio	198,069	0	1	3	0	0	0	0	3
MOUNTAIN									
Montana									
Billings	17,971	0	0	0	0	0	0	0	0
Great Falls	29,883	0	0	0	0	0	1	0	0
Helena	12,037	0	0	0	0	0	0	0	0
Missoula	12,668	0	0	0	0	0	0	0	0
Idaho:									
Boise	23,042	0	0	0	0	0	0	5	0
Colorado:									
Denver	280,911	3	10	11	....	1	2	2	6
Pueblo	43,787	0	3	0	0	0	0	0	1
New Mexico									
Albuquerque	21,000	0	0	0	0	0	1	0	0
Utah									
Salt Lake City	130,948	7	3	6	0	0	1	1	3
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	(1)	6	3	1	0	....	0	1	....
Spokane	108,807	2	1	0	0	....	1	0	....
Tacoma	104,455	....	2	....	....	....	....	....	....
Oregon:									
Portland	282,383	4	4	3	0	0	2	0	0
California									
Los Angeles	(1)	4	24	25	2	1	3	4	8
Sacramento	72,260	2	2	2	0	0	0	0	1
San Francisco	557,530	3	15	4	1	1	8	7	4

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	1	0	0	0	0	0	2	3	0	9	21
New Hampshire:											
Concord	0	0	0	0	0	0	0	0	0	0	5
Manchester	0	0	0	0	0	0	0	0	0	0	12
Vermont:											
Barre	0	1	0	0	0	2	0	0	0	0	3
Burlington	0	0	0	0	0	1	0	0	0	0	7
Massachusetts:											
Boston	15	13	0	0	0	7	4	6	1	18	208
Fall River	1	1	0	0	0	1	2	0	0	0	24
Springfield	2	1	0	0	0	1	0	3	0	10	34
Worcester	2	1	0	0	0	2	0	2	0	6	37

[1] No estimate made.

City reports for week ended September 10, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND—continued											
Rhode Island:											
Pawtucket	0	0	0	0	0	0	0	0	0	0	17
Providence	2	5	0	0	0	2	0	2	0	0	43
Connecticut											
Bridgeport	2		0				1				
Hartford	2	1	0	0	0	1	1	0	0	0	31
New Haven	2	0	0	0	0	1	4	1	0	4	23
MIDDLE ATLANTIC											
New York:											
Buffalo	5	4	0	0	0	7	3	0	0	7	128
New York	28	27	0	0	0	[1] 95	47	41	1	98	1,174
Rochester	2	4	0	0	0	4	1	1	0	0	65
Syracuse	3	3	0	0	0	0	2	0	0	4	41
New Jersey											
Camden	1	0	0	0	0	2	1	0	0	0	25
Newark	4	1	0	0	0	5	2	1	0	44	96
Trenton	1	0	0	0	0	4	0	0	0	2	36
Pennsylvania:											
Philadelphia	21	20	0	0	0	30	14	7	1	20	392
Pittsburgh	12	1	0	0	0	13	4	4	0	9	125
Reading	1	0	0	0	0	0	1	0	0	6	14
EAST NORTH CENTRAL											
Ohio											
Cincinnati	4	4	0	0	0	12	2	1	0	8	154
Cleveland	11	9	0	0	0	15	5	2	0	21	173
Columbus	3	7	0	0	0	4	1	0	0	16	59
Toledo	4	2	0	0	0	3	3	0	0	12	72
Indiana:											
Fort Wayne	1	0	0	0	0	0	2	0	0	1	21
Indianapolis	3	6	0	3	0	6	2	1	1	2	86
South Bend	1	0	0	0	0	0	0	0	0	5	9
Terre Haute	1	1	0	0	0	0	0	0	0	0	15
Illinois:											
Chicago	29	34	1	2	0	40	9	3	2	126	702
Springfield	1	1	0	0	0	1	1	1	0	0	22
Michigan:											
Detroit	26	10	1	0	0	18	6	2	0	62	260
Flint	4	5	0	0	0	2	1	0	0	14	25
Grand Rapids	3	3	1	0	0	2	0	0	0	6	32
Wisconsin:											
Kenosha	0	2	1	0	0	0	0	0	0	0	4
Madison	1	2	0	0	0	0	0	0	0	4	4
Milwaukee	10	7	0	0	0	12	0	0	0	31	135
Racine	2	6	0	0	0	0	1	0	0	8	8
Superior	1	3	0	0	0	1	0	0	0	0	10
WEST NORTH CENTRAL											
Minnesota:											
Duluth	4	4	0	0	0	1	0	1	0	3	17
Minneapolis	13	15	1	0	0	2	1	1	1	0	75
St. Paul	6	3	1	0	0	4	1	0	0	6	56
Iowa:											
Davenport	1	0	0	0			0	0		0	
Des Moines	3	4	0	0		1	0	1	1	3	43
Sioux City	0	1	0	0			0	0		4	
Waterloo	1	0	0	0			0	0		0	
Missouri:											
Kansas City	3	0	0	0	0	3	3	5	2	2	77
St. Joseph	1	0	0	5	0	0	1	0	0	0	41
St. Louis	9	13	0	0	0	9	7	7	1	6	178
North Dakota:											
Fargo	0	2	0	0	0	0	1	0	0	0	6
Grand Forks	1	0	0	0			0	0		0	

[1] Pulmonary tuberculosis only.

City reports for week ended September 10, 1927—**Continued**

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
WEST NORTH CENTRAL—contd.											
South Dakota:											
Aberdeen	2	0	0	0			0	0		0	
Sioux Falls	1	1	0	0			0	0		0	
Nebraska:											
Lincoln	0	1	0	0	0	1	0	0	0	0	25
Omaha	2	3	0	1	0	6	1	0	0	1	56
Kansas:											
Topeka	1	0	0	0	0	2	0	1	0	10	21
Wichita	1	5	0	0	0	1	2	1	0	5	27
SOUTH ATLANTIC											
Delaware:											
Wilmington	1	2	0	0	0	2	0	0	0	3	26
Maryland:											
Baltimore	6	5	0	0	0	11	11	9	0	33	188
Cumberland	0	0	0	0	0	0	0	0	0	0	7
Frederick	0	0	0	0	0	0	0	0	0	0	4
District of Col.:											
Washington	4	8	0	1	0	6	5	3	1	5	114
Virginia:											
Lynchburg	0	0	0	0	0	4	1	0	0	5	13
Norfolk	0	1	0	0	0	1	1	1	0	0	
Richmond	3	2	0	0	0	5	2	2	0	0	43
Roanoke	1	1	0	0	0	0	2	0	0	0	15
West Virginia:											
Charleston	0	3	1	0	0	1	2	3	0	4	16
Wheeling	2	0	0	0	0	2	1	0	0	3	22
North Carolina:											
Raleigh	0	0	0	0	0	0	0	0	0	2	11
Wilmington	0	0	0	0	0	0	1	0	0	1	9
Winston-Salem	0	2	0	0	0	2	2	2	0	6	31
South Carolina:											
Charleston	0	0	0	0	0	0	3	3	1	0	16
Columbia	0	2	0	0	0	0	1	0	0	1	9
Greenville	0	0	0	0	0	1	0	0	0	0	9
Georgia:											
Atlanta	4	6	0	0	0	4	5	8	1	4	67
Brunswick	0	0	0	0	0	0	0	0	0	0	4
Savannah	0	0	0	0	0	2	1	1	1	0	39
Florida:											
Miami		0		0	0	1		1	0	0	26
St. Petersburg	0		0		0	1	0		0		7
Tampa	0	1	0	0	0	0	0	0	0	0	33
EAST SOUTH CENTRAL											
Kentucky:											
Covington	1	3	0	0	0	1	0	0	0	0	20
Lexington		2		0	0	2		0	0	2	18
Louisville	2	3	0	1	0	3	6	1	0	2	83
Tennessee:											
Memphis	1	4	0	0	0	2	5	5	2	1	60
Nashville	2	1	0	0	0	4	6	5	0	0	53
Alabama:											
Birmingham	3	6	0	1	0	7	5	7	2	1	71
Mobile	1	1	1	0	0	0	1	0	0	0	25
Montgomery	0	1	0	0	0	0	1	4	0	3	
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	0	0	0			0	0		1	
Little Rock	1	5	0	0	0	1	2	0	1	0	
Louisiana:											
New Orleans	1	2	0	0	0	17	5	3	0	0	139
Shreveport	1	1	0	0	0	1	2	0	0	0	24
Oklahoma:											
Oklahoma City	1	2	1	0	0	1	2	0	0	1	39
Tulsa		0		0				1		1	

City reports for week ended September 10, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
WEST SOUTH CENTRAL—continued											
Texas:											
Dallas	1	------	0	------	------	------	3	------	------	------	------
Galveston	0	0	0	0	0	0	1	2	0	0	6
Houston	0	0	1	0	0	2	1	5	1	0	41
San Antonio	1	0	0	0	0	3	0	1	0	0	36
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	0	0	0	0	1	6
Great Falls	0	0	1	0	0	0	0	2	0	0	4
Helena	0	0	0	0	0	0	0	0	0	0	4
Missoula	0	0	0	0	0	0	1	0	0	0	7
Idaho:											
Boise	0	0	0	0	0	0	0	0	0	0	16
Colorado:											
Denver	4	3	2	0	0	11	3	1	1	6	91
Pueblo	0	0	0	0	0	0	1	4	0	0	11
New Mexico:											
Albuquerque	0	2	0	0	0	4	1	0	1	0	7
Utah:											
Salt Lake City	1	3	0	1	0	0	1	0	0	17	26
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	3
PACIFIC											
Washington:											
Seattle	5	0	1	0	------	------	3	1	------	3	------
Spokane	3	1	1	3	------	------	0	0	------	0	------
Tacoma	2	------	1	------	------	------	0	------	------	------	------
Oregon:											
Portland	3	0	3	5	0	4	2	0	0	0	54
California:											
Los Angeles	7	6	2	0	0	22	4	1	1	12	175
Sacramento	0	1	1	2	0	0	1	1	0	2	21
San Francisco	6	4	1	0	0	5	1	0	0	11	118

Division, State, and city	Meningococcus meningitis: Cases	Meningococcus meningitis: Deaths	Lethargic encephalitis: Cases	Lethargic encephalitis: Deaths	Pellagra: Cases	Pellagra: Deaths	Poliomyelitis (infantile paralysis): Cases, estimated expectancy	Poliomyelitis: Cases	Poliomyelitis: Deaths
NEW ENGLAND									
Maine:									
Portland	0	0	0	0	0	1	1	1	3
Massachusetts:									
Boston	2	2	0	0	0	0	2	36	3
Fall River	0	0	0	0	0	0	1	2	0
Springfield	1	0	0	0	0	0	0	1	0
Worcester	0	0	0	0	0	0	0	2	0
Rhode Island:									
Providence	0	0	0	0	0	0	1	2	0
Connecticut:									
Hartford	0	0	0	0	0	0	1	1	0
New Haven	0	0	0	0	0	0	0	1	0

City reports for week ended September 10, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
MIDDLE ATLANTIC									
New York									
Buffalo	1	0	0	0	0	0	1	0	0
New York	3	2	4	5	0	0	10	42	7
New Jersey:									
Newark	0	0	0	0	0	0	1	4	0
Pennsylvania:									
Philadelphia	0	1	0	0	0	1	1	3	0
Pittsburgh	0	0	0	0	0	1	0	3	1
EAST NORTH CENTRAL									
Ohio.									
Cincinnati	0	0	0	0	0	0	0	3	1
Cleveland	0	0	0	0	0	1	1	9	0
Toledo	0	0	0	0	0	0	0	1	0
Indiana:									
Fort Wayne	0	0	0	0	0	0	0	1	0
South Bend	1	0	0	0	0	0	0	1	0
Illinois.									
Chicago	3	6	0	0	0	0	5	16	3
Michigan.									
Detroit	0	0	0	0	0	0	1	3	0
Grand Rapids	0	0	0	0	0	0	0	1	0
Wisconsin									
Madison	0	0	0	0	0	0	0	1	0
Milwaukee	2	1	0	0	0	0	1	2	0
WEST NORTH CENTRAL									
Minnesota									
Duluth	0	0	0	1	0	0	0	0	0
Iowa.[1]									
Des Moines	0	0	0	0	0	0	0	2	1
Waterloo	0	0	0	0	0	0	0	4	1
Missouri									
Kansas City	0	0	1	1	0	0	0	5	1
Nebraska									
Omaha	0	0	1	1	0	0	1	2	0
Kansas									
Wichita	0	0	0	0	0	0	0	1	0
SOUTH ATLANTIC									
Maryland									
Baltimore	0	0	2	2	1	1	2	0	0
District of Columbia:									
Washington	0	0	1	1	0	0	0	0	0
West Virginia									
Wheeling	0	0	0	0	0	0	0	1	0
North Carolina									
Raleigh	0	0	0	0	0	2	0	0	0
South Carolina.									
Charleston	0	0	0	0	2	1	0	0	0
Greenville	0	0	0	0	0	1	0	0	0
Georgia:									
Atlanta	0	0	0	0	1	1	0	0	0
Savannah[2 3]	0	0	0	0	0	3	0	0	0
Florida:									
Tampa[3]	1	1	0	0	0	0	0	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Louisville	0	0	0	0	0	0	0	1	0
Tennessee:									
Memphis	0	0	0	0	0	1	0	0	0
Nashville	0	0	0	0	0	1	0	1	0
Alabama:									
Birmingham	0	0	0	0	2	1	0	0	0
Montgomery	0	0	0	0	0	0	0	1	0

[1] Malta fever: 1 case at Davenport, Iowa.
[2] Dengue: 1 case at Savannah, Ga
[3] Typhus fever: 5 cases and 1 death at Savannah, Ga., and 2 cases at Tampa, Fla.

City reports for week ended September 10, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	1	0	0	0
Louisiana:									
New Orleans	0	0	0	0	1	1	0	0	0
Shreveport	0	0	0	0	0	1	0	0	0
Oklahoma:									
Oklahoma City	0	0	0	2	0	1	0	0	0
Tulsa	1	0	0	0	0	0	0	0	0
Texas.									
Houston	0	0	0	0	0	1	0	0	1
MOUNTAIN									
Montana:									
Great Falls	0	0	0	0	0	0	0	1	0
Utah:									
Salt Lake City	0	0	0	0	0	0	0	1	0
PACIFIC									
Washington:									
Seattle	1		0		0		1	0	
Oregon:									
Portland	0	1	0	1	0	0	0	0	0
California.									
Los Angeles	0	0	1	1	0	0	1	5	1
San Francisco	0	1	0	0	0	0	0	3	1

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended September 10, 1927, compared with those for a like period ended September 11, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926, and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table on the following page.

Summary of weekly reports from cities, August 7 to September 10, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Aug. 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug. 20, 1927	Aug. 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927	Sept. 11, 1926	Sept. 10, 1927
101 cities	69	90	68	80	65	81	73	[2] 84	75	[3] 92
New England	31	70	47	111	50	86	26	88	38	[4] 99
Middle Atlantic	62	97	59	94	56	78	59	77	53	90
East North Central	101	94	87	85	76	81	99	87	78	[5] 91
West North Central	56	67	83	44	81	54	67	69	75	[6] 62
South Atlantic	48	82	60	62	61	89	69	[2] 89	136	109
East South Central	57	25	21	51	57	61	41	51	103	107
West South Central	26	92	64	75	34	96	60	164	86	[7] 91
Mountain	73	180	146	54	73	135	91	117	173	153
Pacific	104	107	62	60	91	94	134	73	91	[8] 89

MEASLES CASE RATES

101 cities	59	28	44	32	30	25	25	[2] 21	27	[3] 19
New England	68	63	52	84	38	58	33	58	35	[4] 73
Middle Atlantic	33	28	27	35	15	24	17	18	11	16
East North Central	84	19	72	13	43	13	31	11	20	[5] 15
West North Central	67	22	28	22	20	16	10	16	10	[6] 8
South Atlantic	80	14	35	27	15	31	9	[2] 18	19	14
East South Central	31	15	36	5	36	25	31	10	16	10
West South Central	4	21	9	42	4	17	0	42	4	[7] 10
Mountain	64	36	18	18	27	27	36	9	100	36
Pacific	94	60	78	71	94	52	91	42	158	[8] 33

SCARLET FEVER CASE RATES

101 cities	51	58	48	50	55	54	51	[2] 57	58	[3] 53
New England	68	93	73	51	54	81	59	60	80	[4] 62
Middle Atlantic	30	39	29	31	32	38	25	38	32	30
East North Central	55	73	46	78	55	61	58	80	61	[5] 66
West North Central	119	75	119	64	133	62	131	69	93	[6] 93
South Atlantic	30	33	39	42	58	63	37	[2] 60	56	60
East South Central	47	36	36	20	62	87	57	76	109	97
West South Central	21	59	17	50	26	59	26	59	47	[7] 40
Mountain	36	117	36	81	64	63	82	63	73	54
Pacific	86	63	78	42	75	37	70	34	88	[8] 33

SMALLPOX CASE RATES

101 cities	7	4	2	5	4	5	2	[2] 4	2	[3] 3
New England	0	0	0	0	0	0	0	0	0	[4] 0
Middle Atlantic	0	0	1	0	0	0	0	0	0	0
East North Central	1	5	2	7	7	6	0	7	2	[5] 3
West North Central	4	4	4	10	0	4	0	2	2	[6] 12
South Atlantic	11	5	6	4	9	0	9	[2] 0	2	2
East South Central	26	0	5	25	0	25	10	0	0	10
West South Central	21	0	0	4	9	0	4	0	0	[7] 0
Mountain	73	9	0	18	0	27	0	36	0	9
Pacific	32	24	5	13	13	31	13	18	16	[8] 14

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.
[2] Greenville, S. C., not included.
[3] Pawtucket, R. I., Bridgeport, Conn., Hartford, Conn., Fort Wayne, Ind., Waterloo, Iowa, Dallas, Tex., and Tacoma, Wash., not included.
[4] Pawtucket, R. I., Bridgeport, Conn., and Hartford, Conn., not included.
[5] Fort Wayne, Ind., not included.
[6] Waterloo, Iowa, not included.
[7] Dallas, Tex., not included.
[8] Tacoma, Wash., not included.

***Summary of weekly reports from cities, August 7 to September 10, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926*—Continued**

TYPHOID FEVER CASE RATES

	Week ended—									
	Aug. 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug 20, 1927	Aug 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927	Sept. 11, 1926	Sept. 10, 1927
101 cities	35	25	41	37	40	31	40	[2] 32	45	[3] 30
New England	17	30	17	30	19	33	12	21	17	[4] 48
Middle Atlantic	24	15	34	20	39	21	34	28	34	27
East North Central	20	14	17	19	20	11	20	15	20	[5] 7
West North Central	24	22	48	38	42	20	42	10	50	[6] 32
South Atlantic	99	45	93	82	56	58	91	[2] 71	104	58
East South Central	140	97	186	219	233	204	176	183	284	112
West South Central	47	88	43	80	39	75	43	55	39	[7] 56
Mountain	73	36	73	27	18	45	9	54	18	63
Pacific	29	10	24	31	38	21	46	8	27	[8] 8

INFLUENZA DEATH RATES

	Aug. 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug 20, 1927	Aug 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927	Sept. 11, 1926	Sept. 10, 1927
95 cities	1	3	3	4	3	5	3	[2] 4	4	[9] 4
New England	0	2	0	2	0	2	0	2	0	[4] 3
Middle Atlantic	1	2	1	2	3	2	2	3	4	3
East North Central	0	2	3	2	3	3	4	5	4	[5] 4
West North Central	2	6	2	0	8	2	4	4	0	0
South Atlantic	0	4	2	6	2	11	0	[2] 7	0	6
East South Central	10	5	0	10	0	15	16	5	0	10
West South Central	13	13	26	30	4	22	9	13	18	[7] 16
Mountain	0	0	0	0	18	9	9	18	36	9
Pacific	0	3	7	0	0	7	0	0	0	[8] 7

PNEUMONIA DEATH RATES

	Aug. 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug 20, 1927	Aug 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927	Sept. 11, 1926	Sept. 10, 1927
95 cities	50	55	54	45	47	46	51	[2] 56	51	[9] 62
New England	31	77	40	49	33	51	50	49	40	[4] 68
Middle Atlantic	62	57	58	47	56	55	59	72	65	67
East North Central	35	41	35	35	37	34	34	51	37	[5] 60
West North Central	25	44	49	25	42	31	36	23	30	44
South Atlantic	57	72	87	53	59	37	64	[2] 42	44	50
East South Central	52	66	36	66	47	66	52	46	41	112
West South Central	106	56	66	69	71	65	49	82	97	[7] 63
Mountain	82	63	82	36	73	36	64	54	64	90
Pacific	39	55	78	72	21	62	78	55	57	[8] 48

[2] Greenville, S. C., not included.
[3] Pawtucket, R. I., Bridgeport, Conn., Hartford, Conn., Fort Wayne, Ind., Waterloo, Iowa, Dallas, Tex., and Tacoma, Wash., not included.
[4] Pawtucket, R. I., Bridgeport, Conn., and Hartford, Conn., not included.
[5] Fort Wayne, Ind., not included.
[6] Waterloo, Iowa, not included.
[7] Dallas, Tex., not included.
[8] Tacoma, Wash., not included.
[9] Pawtucket, R. I., Bridgeport, Conn., Hartford, Conn., Fort Wayne, Ind., Dallas, Tex., and Tacoma, Wash., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

PLAGUE ON VESSELS

Steamship "Capafric"—At Duala, French Cameroons, from Nigeria—August 23, 1927.—Three cases of plague with one death were reported on the steamship *Capafric*, from Nigeria, arriving at Duala, French Cameroons, August 23, 1927.

Steamship "Elcano"—At Piraeus, Greece, from Constanza, Rumania, August 19, 1927.—The steamship *Elcano* arrived at Port Said, Egypt, August 22, 1927, with history of a case of plague disembarked at Piraeus, Greece, August 19, 1927. The case occurred in a member of the personnel of the ship. The itinerary of the vessel showed communication with Alexandria, Egypt, August 2 to 4; Constanza, August 8 to 15; Piraeus, August 18 to 20, 1927.

Steamship "Madonna"—At Dakar, Senegal, from ports south—August 24, 1927.—A case of plague occurring in a European passenger was reported landed from the steamship *Madonna* arriving August 24, 1927, at Dakar, Senegal, from ports south and destined for Marseilles, France.

THE FAR EAST

Report for week ended September 3, 1927.—The following report for the week ended September 3, 1927, was transmitted by the Eastern Bureau of the health section of the secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Egypt: Suez	1	0	0	0	0	0
Iraq: Basra	0	0	31	21	1	1
Persia: Mohammerah	0	0	11	5	0	0
British India:						
Bombay	...	1	...	1	2	3
Madras	...	0	...	24	2	0
Vizagapatam	...	0	...	0	1	1
Calcutta	...	0	...	10	4	2
Bassein	...	1	...	0	0	0
Rangoon	...	0	...	0	2	1
Ceylon: Colombo	1	0	0	0	0	0
Straits Settlements: Singapore	1	0	0	0	0	0
Siam: Bangkok	0	0	1	0	0	0
Dutch East Indies:						
Banjermasin	0	0	0	0	26	1
Surabaya	0	0	0	0	1	0
French Indo-China:						
Saigon and Cholon	1	0	1	0	1	0
Turane	0	0	2	2	0	0
Philippine Islands: Manila	0	0	1	0	0	0
China:						
Canton	0	0	10	6	0	0
Amoy	0	0	18	...	0	0
Shanghai	0	0	...	23	0	0
Hong Kong	0	0	0	0	2	1
Macao	0	0	1	0	0	0

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Aden Protectorate.—Aden, Kamaran, Perim.
Arabia.—Bahrein.
Persia—Bender-Abbas, Bushire, Lingah.
India—Karachi, Chittagong, Cochin, Tuticorin, Negapatam, Moulmein.
Portuguese India.—Nova Goa.
Federated Malay States—Port Swettenham.
Straits Settlements.—Penang.
Dutch East Indies—Batavia, Pontianak, Semarang, Cheribon, Balikpapan, Padang, Belawan-Deli, Tarakan, Palembang, Samarinda, Menado, Makassar
Sarawak—Kuching.
British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.
Portuguese Timor.—Dilly.
Philippine Islands.—Iloilo, Jolo, Cebu, Zamboanga
French Indo-China.—Haiphong.
China.—Tientsin, Tsingtao.
Wei-hai-wei.
Formosa.—Keelung, Takao.
Chosen—Chemulpo, Fusan.
Manchuria—Yingkow, Antung, Harbin, Mukden, Changchun.
Kwantung.—Port Arthur, Dairen.
Japan—Nagasaki, Yokohama, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns, Port Moresby.
New Guinea—Port Moresby.
New Britain Mandated Territory—Rabaul and Kokopo.
New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.
Western Samoa.—Apia.
New Calidonia.—Nouméa.
Fiji.—Suva.
Hawaii—Honolulu.
Society Islands.—Papeete.

AFRICA

Egypt.—Alexandria, Port Said.
Anglo-Egyptian Sudan.—Port Sudan, Suakin.
Eritrea—Massaua.
French Somaliland.—Djibouti.
British Somaliland.—Berbera.
Italian Somaliland.—Mogadiscio.
Kenya.—Mombasa.
Zanzibar.—Zanzibar.
Tanganyika.—Dar-es-Salaam.
Seychelles.—Victoria.
Portuguese East Africa.—Mozambique, Beira, Lourenço-Marques.
Union of South Africa—East London, Port Elizabeth, Cape Town, Durban.
Reunion.—Saint Denis.
Mauritius.—Port Louis.
Madagascar.—Majunga, Tamatave, Diégo-Suarez.

AMERICA

Panama—Colon, Panama.

Reports had not been received in time for publication from:

Dutch East Indies.—Sabang.
Union of Socialist Soviet Republics.—Vladivostok.

Belated information:

Week ended August 20.—*Pondicherry* and *Karikal*, nil.

Movement of infected ships

Kobe.—The mail steamers *Buckeye State* and *Glenapp* arrived during the week ended September 3 from Shanghai infected with cholera.

Hong Kong.—The mail-steamer *Morea* arrived from Shanghai infected with cholera on September 2.

The coolie steamer *Kutsang* arrived on September 8 from Amoy infected with cholera.

Singapore.—The pilgrim ship *Armanestan* arrived September 6 from Jeddah infected with smallpox.

ARGENTINA

Plague—Entre Rios.—During the week ended August 13, 1927, one case of plague was reported in Argentina, occurring in the interior of the Province of Entre Rios.

CANADA

Communicable diseases—Week ended September 10, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases in six Provinces of Canada for the week ended September 10, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Manitoba	Saskatchewan	Alberta	Total
Influenza	2			1	3		6
Poliomyelitis						[1] 42	42
Smallpox					33	1	34
Typhoid fever	3	10	30	2	14	3	62

[1] These cases are chiefly about city of Edmonton, Alberta.

Communicable diseases—Province of Ontario—August, 1927 (comparative).—During the month of August, 1927, communicable diseases were reported in the Province of Ontario, Canada, as compared with occurrence during the corresponding period of the preceding year, as follows:

Disease	1927		1926	
	Cases	Deaths	Cases	Deaths
Cerebrospinal meningitis		5	6	2
Chancroid	3		1	
Chicken pox	169		136	
Diphtheria	175	9	158	13
Dysentery	1	1		
Erysipelas	3			
German measles	21		24	
Gonorrhea	128		107	
Influenza	2	1		
Lethargic encephalitis		1		
Measles	205		320	
Mumps	52		2	
Pneumonia		75		67
Poliomyelitis	3		5	
Scarlet fever	123	1	106	
Septic sore throat	2			
Smallpox	69		17	
Syphilis	90		48	
Tetanus	1			
Tuberculosis	92	42	95	59
Typhoid fever	141	2	43	2
Whooping cough	297	3	256	8

Smallpox.—Smallpox was reported present in nine localities, the greatest number of cases being reported at Ottawa, viz, 38, and the lowest number, viz, 1 case, at Sarnia.

Communicable diseases—Quebec—Week ended September 10, 1927.—The bureau of health of the Province of Quebec reports cases of certain communicable diseases for the week ended September 10, 1927, as follows:

Disease	Cases	Disease	Cases
Chicken pox	2	Tuberculosis	19
Diphtheria	35	Typhoid fever	30
Measles	1	Whooping cough	12
Scarlet fever	34		

Epidemic poliomyelitis—Alberta—August-September, 1927.—Poliomyelitis in epidemic form has been reported in Alberta, Canada, as follows: *Calgary*—September 4 to 10, 1927, 4 cases, of which 1 case was stated to have been from a country district. *Edmonton*—One case reported in May, 1927; in July, 4 cases; in August, 51 cases; September 1 to 9, 14 cases; total for Edmonton, 70 cases. Under date of September 9, 1927, 22 cases were stated to exist in other localities in the Province of Alberta, mainly in the vicinity of Edmonton.

Typhoid fever—Montreal—January 2-September 17, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	May 21, 1927	770	26
Jan. 15, 1927	4	3	May 28, 1927	353	38
Jan. 22, 1927	1	2	June 4, 1927	239	37
Jan. 29, 1927	3	1	June 11, 1927	128	36
Feb. 5, 1927	1	0	June 18, 1927	86	
Feb. 12, 1927	0	0	June 25, 1927	75	23
Feb. 19, 1927	1	2	July 2, 1927	66	21
Feb. 26, 1927	1	1	July 9, 1927	52	10
Mar. 5, 1927	9	1	July 16, 1927	39	4
Mar. 12, 1927	203	4	July 23, 1927	22	9
Mar. 19, 1927	383	14	July 30, 1927	23	10
Mar. 26, 1927	568	22	Aug. 6, 1927	16	5
Apr. 2, 1927	649	48	Aug. 13, 1927	20	5
Apr. 9, 1927	386	40	Aug. 20, 1927	14	4
Apr. 16, 1927	175	38	Aug. 27, 1927	8	3
Apr. 23, 1927	125	43	Sept. 3, 1927	27	
Apr. 30, 1927	105	23	Sept 10, 1927	17	
May 7, 1927	106	19	Sept. 17, 1927	13	2
May 14, 1927	367	16			

CZECHOSLOVAKIA

Communicable diseases—July, 1927.—During the month of July, 1927, communicable diseases were reported in the Republic of Czechoslovakia as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	3		Puerperal fever	41	16
Cerebrospinal meningitis	19	8	Scarlet fever	884	20
Diphtheria	335	20	Trachoma	263	
Dysentery	47	3	Typhoid fever	614	32
Malaria	120		Typhus fever	6	
Paratyphoid fever	11				

GREECE

Plague—Athens.—A case of plague was reported at Athens, Greece, August 29, 1927.

RUMANIA

Poliomyelitis—Bucharest, city and Province—June-September, 1927.—Epidemic poliomyelitis was reported present at Bucharest, Rumania, in June, 1927, and from that period to September 6, a total of 226 cases in Bucharest and 50 cases in the Province, with a mortality of 15–16 per cent, was reported. There were 12 cases reported in adults over 20 year of age.

UNION OF SOUTH AFRICA

Plague—Orange Free State—July 31–August 6, 1927.—During the week ended August 6, 1927, a fatal case of plague was reported in Rouxville District, Orange Free State. The case occurred in a native and on a farm.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended September 30, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	Aug. 7-13	5	2	
Shanghai	Aug. 7-20		13	In International Settlement and French Concession, Chinese and foreign
Swatow	July 31-Aug. 6	42		Aug. 7-20, 1927 Reported prevalent
India				July 17-30, 1927 Cases, 23,526; deaths, 12,148.
Bombay	July 24-Aug 6	76	39	
Madras	Aug 14-20	110	61	
Indo-China (French):				
Saigon	July 16-21	1		
Iraq:				
Basra	July 17-23	5	5	
Do	July 24-30	29	18	
Do	July 31-Aug. 6	48	35	
Do	Aug. 7-13	125	108	
Do	Aug 14-20	99	79	
Do	Aug 21-27	47	19	
Persia:				
Abadan	July 24-30	122	103	
Do	July 31-Aug 6	66	58	
Do	Aug. 7-13	27	22	
Ahwaz	July 31-Aug. 6	12	6	
Do	Aug. 7-13	8	7	
Minab	do		23	
Mohammerah	July 17-23			Present.
Do	July 24-30	52	37	
Do	July 31-Aug. 6	34	26	
Do	Aug. 7-13	16	12	
Do	Aug 14-20	69	60	
Do	Aug. 21-27	23	20	
Siam				July 24-30, 1927: Cases, 26; deaths, 20. Apr. 1-July 30, 1927: Cases, 626; deaths, 430.
Bangkok	July 24-30		1	

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended September 30, 1927—Continued

PLAGUE

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	Aug 21-31	1		
Oran	do	4	3	
Argentina:				
Entre Rios	Aug. 7-13	1		
British East Africa:				
Kenya—				
Mombasa	July 24-30	1	1	Imported from Fort Hall.
Tanganyika Territory	July 24-Aug. 6		10	
China				
Tientsin	Aug 14-20	2		
Greece				
Athens	Aug. 29	1		
Patras	Aug 31-Sept 4	2		
India				
Bombay	July 24-Aug 3	7	7	
Madras Presidency	July 24-30	68	27	
Rangoon	July 31-Aug 6	5	5	
Java				
East Java and Madura—				
Surabaya	July 17 23	6	6	June 19-25, 1927: Cases, 4, deaths 3 Out of date.
Senegal				
Baol District	Aug 22-28	23	13	In two Cantons
Cayor District	do	227	166	Greatest prevalence, Tivaouane District.
Dakar	do	10	7	
Rufisque	do	3	3	
Siam				Apr 1-July 30, 1927 Cases, 10; deaths, 7
Union of South Africa:				
Orange Free State—				
Rouxville District	July 31-Aug. 6	1	1	Native On farm.
On Vessels.				
S. S Capafric	Aug 23	3	1	At Duala, French Cameroons, from Nigeria
S S Elcano	Aug. 19	1		At Piraeus, Greece, from Constanza, Rumania, Aug. 15, 1927 at Port Said Aug. 22, 1927
S. S. Madonna	Aug 24	1		At Dakar, Senegal; from ports south, destination Marseille, France In European passenger.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
British South Africa:				
Northern Rhodesia	Aug. 6-12	3		
Canada	Sept 4-10			Cases, 34.
Alberta	do	1		
British Columbia—				
Vancouver	Aug. 29-Sept 4	2		
Ontario				Aug. 1-31, 1927: Cases, 69; corresponding period, year 1926, 17 cases.
Ottawa	August, 1927	38		
Do	Sept. 10-17	10		
Saskatchewan	Sept. 4-10	33		
Moose Jaw	do	9		
China:				
Foochow	Aug. 7-13			Present.
Hong Kong	do	1	1	
Great Britain:				
England and Wales	Aug. 21-Sept. 3	277		
Leeds	Aug. 28-Sept. 3	3		
Scotland—				
Dundee	do	1		
Greece:				
Saloniki	Aug. 1-15		2	
India				July 17-30, 1927: Cases, 5,338; deaths, 1,411.
Bombay	July 24-Aug. 6	23	13	
Rangoon	July 31-Aug. 6	5	1	
Indo-China (French):				
Saigon	July 15-21	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended September 30, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Poland				July 18–Aug. 6, 1927: Cases, 3.
Siam				July 24–30, 1927: Cases, 4: deaths, 2. Apr. 1–July 30, 1927: Cases, 172; deaths, 42.
Syria:				
Damascus	Aug. 11–20	1		
Union of South Africa:				
Cape Province—				
Mount Ayliffe District	July 31–Aug. 6			Outbreaks.

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	Aug. 21–31	2		
Oran	do	1		
Chosen:				
Chemulpo	July 1–31	1		
Gensan	do	2		
Seoul	do	2	1	
Czechoslovakia	do	6		
Egypt:				
Cairo	Apr. 23–May 20	7	4	
Greece:				
Athens	July 1–31	1		
Mexico:				
Mexico City	Aug. 28–Sept. 3	9		Including municipalities in Federal District
Poland				July 24–Aug. 6, 1927: Cases, 36; deaths, 4.
Union of South Africa:				
Cape Province				July 31–Aug. 6, 1927: Outbreaks in four districts.
Natal				July 31–Aug 6, 1927: Outbreaks in one district.
Transvaal—				
Johannesburg	Aug. 14–20	1		

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Senegal:				
Dakar	Sept. 17			Present.

Reports Received from June 25 to September 23, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22–Aug. 6	6	1	
Canton	May 1–July 23	16	7	
Foochow	July 24–30			Present.
Hong Kong	July 17–23	2	2	
Kulangsu	June 21	1		
Shanghai	June 19–25	2		
Do	July 31–Aug. 6		3	In international settlement and French concession.
Swatow	May 15–July 30	96	13	
India	Apr. 17–July 16			Cases, 102,184; deaths, 59,008.
Bombay	May 8–July 23	27	11	
Calcutta	May 8–Aug. 6	580	355	
Karachi	May 29–June 4	1	1	
Madras	June 19–Aug. 13	568	272	
Rangoon	May 8–July 30	17	13	
India, French Settlements in	Mar. 30–June 30	15	8	

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 23, 1927—Continued

CHOLERA—Continued

Place	Date	Cases	Deaths	Remarks
Indo-China (French)	Apr 1-July 10			
Annam	do	1,467		Cases, 11,145.
Cambodge	do	235		
Cochin-China	do	1,354		
Saigon	June 4-July 14	9	4	
Tonkin	Apr 1-June 30	8,089		
Iraq:				
Baghdad	July 24 30	29	18	
Basra	July 25-Aug 13	172	140	
Japan:				
Yokohama	July 31-Aug. 6	1	1	
Persia:				
Abadan	July 19 31		166	
Mohammerah	do		61	
Nassen	do		10	
Philippine Islands				
Manila	July 17-23	1		
Bulacan Province	June 7-July 8	3	2	
Leyte Province—				
Barugo	June 29	1	1	
Carigara	June 23	1	1	Final diagnosis not received.
Palo	May 18	1		
Siam	May 1-July 23			Cases, 226; deaths, 130.
Bangkok	do	43	12	
On vessel				
S S Adrastus	Reported Aug. 6	1	1	At Yokohama, Japan.
S S War Mehtar (oil tanker)	Aug 4	1	1	At Saffagha, Egypt.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Argentina	Jan 1-Aug 2			Cases, 80; deaths, 44.
Buenos Aires	Apr 10-May 7	4	3	
Cordoba	Jan 11-Aug 6	52	29	
Corrientes	June 1	1	1	
Entre Rios	Mar 29-Aug 2	7	1	
Santa Fe	Apr. 28 May 16	4	3	
Territory—				
Chaco—				
Barranqueras	May 29	2	2	
Formosa	June 25	3	2	
Pampa	July 27-Aug. 2	4		
Rio Negro	Aug 6	1		
City—				
Merou	Reported July 14			Present.
Rosario	May 7	1	1	
Santa Fe	May 16	4	2	
Azores:				
Rebeira Grande	June 12-18			9 miles from port.
St. Michaels Island	May 15-July 30	3		
British East Africa:				
Kenya	Apr. 24-July 2	60	14	
Nairobi	May 22-28	6		
Tanganyika	Mar. 29-May 28		37	
Uganda	Jan. 1-Feb 28	138	121	
Do	Mar. 27-June 18	366	300	
Canary Islands:				
Laguna district—				
Tejina	June 17	1		
Ceylon:				
Colombo	May 1-July 2	17	11	Plague rats, 4.
China:				
Amoy	July 3-23			Present in surrounding country.
Ecuador:				
Guayaquil	June 1-July 31			Rats taken, 48,290; found infected, 34.
Egypt	May 1-July 8			Cases, 7; deaths, 2.
	Aug. 6-12			Cases, 5.
Alexandria	June 4-10	1		
Biba	do	1		At Nama.
Beni-Souef	June 4-July 13	5	2	
Dakhalia	June 24-July 9	6	1	
Minia	Aug. 8-9	4		
Port Said	June 24-July 21	4	1	
Tanta district	June 4-10	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 28, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Greece	May 1-June 30	4	3	
Athens	June 1-Aug. 6	2		Including Piraeus.
Mytilene	Aug 9	1		
Patras	May 30-Aug. 6	6	1	
Hawaii Territory:				
Hamakua	July 15			1 plague rodent.
Honokaa	May 17-23	2	2	
Kukuihaele	Aug. 12-17	1	1	Plague rodent.
Paauilo	July 26-Aug. 1		4	
India	Apr. 17-July 16			Cases, 21,814; deaths, 8,324.
Bombay	May 8-July 23	80	67	
Madras	May 1-July 23	353	167	
Rangoon	May 8-July 30	48	44	
Indo-China (French)	Apr. 1-July 10	32		
Kwang-Chow-Wan	May 21-July 10	68		
Iraq:				
Baghdad	Apr. 8-May 28	12	1	
Java:				
Batavia	May 1-July 23	182	183	Province.
East Java and Madura	May 22-July 16	28	27	
Pasoeroean Residency	May 9			Outbreak reported at Nagdiwono.
Surabaya	Apr 17-May 7	24	24	
Madagascar				Mar. 16-Apr. 30, 1927: Cases, 256; deaths, 135.
Province—				
Ambositra	Mar. 16-July 15	94	87	
Antisrabe	Mar. 16-May 15	8	8	
Miarinarivo (Itasy)	Mar. 16-July 15	65	59	
Moramanga	May 16-July 15	24	23	
Tananarive	Mar 16-July 15	221	194	
Tananarive Town	Mar 16-June 30	22	20	
Nigeria	Mar. 1-May 31	228	177	
Peru	Apr.-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	do	13	4	
Lima City	Apr. 1-30	5	1	
Senegal	May 23-Aug. 21			Cases, 656; deaths, 415.
Baol	June 2-July 31	45	23	
Cayor Frontier	July 4-31	126	74	
Dakar	June 20-Aug. 21	116	75	
Facel	July 6	17	8	
Guindel	June 20-26	11	2	
M'Bour	July 6-10	28	23	
Medina	June 13-19	2	2	
Pout	July 4-10	1		
Rufisque	May 23-Aug. 21	204	152	
Thies district	May 23-July 30	27	9	
Tivaouane	June 2-July 17	50	32	
Siam	Apr. 1-July 23			Cases, 10; deaths, 7.
Bangkok	May 8-June 11	2	1	
Syria:				
Beirut	June 11-July 10	3		
Tunisia	Apr. 21-July 10	144		
Tunis	July 25-Aug. 1	1		
Turkey:				
Constantinople	May 13-19	1		
Union of South Africa.				
Cape Province—				
Maraisburg district	May 1-14	2	2	Native.
Orange Free State—				
Edenburg district	July 17-26	3	3	Natives; on farm.
Rouxville district	July 24-30	1	1	
On vessel:				
S. S. Averoff	June 24-30	1		On Greek warship at port of Athens.
S. S. Ransholm	Aug. 5	3		At Gavle, Sweden, from Rufisque, Senegal. Originally reported in quarantine at Gavle in July.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 23, 1927—Continued

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-July 10			Cases, 648.
Algiers	May 11-June 30	8		
Oran	May 21-Aug. 10	47		
Arabia:				
Aden	July 17-Aug. 1	2	1	
Brazil:				
Porto Alegre	July 1-31	5		
Rio de Janeiro	May 22-Aug. 20	12	8	
British East Africa:				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 29-June 18	2	22	
Zanzibar	Apr. 1-May 31	19	7	
British South Africa:				
Northern Rhodesia	Apr. 30-Aug. 5	108	2	
Canada	June 5-Sept. 3			Cases, 413.
Alberta	June 12-Sept. 3			Cases, 96.
Calgary	June 12-Aug. 27	9		
British Columbia—				
Vancouver	May 23-29	2		
Manitoba	June 5-Sept. 3			Cases, 31.
Winnipeg	June 12-Aug. 27	17		
Ontario	June 5-Aug. 27			Cases, 177.
Ottawa	June 12-Sept. 10	122		
Sarnia	Aug. 7-13	1		
Toronto	June 19-July 23	9		
Quebec	June 19-Aug. 27	15		
Saskatchewan	June 12-Sept. 3			Cases, 71.
Moose Jaw	Aug. 14-20	5		
Regina	July 17-Aug. 27	10		
Ceylon	May 1-7			Cases, 3, deaths, 1.
Colombo	July 31-Aug. 6	1	1	
China:				
Amoy	May 8-28	1		
Do	July 3-16			Present in surrounding country.
Antung	July 4-31	3		
Chefoo	May 8-14			Present.
Foochow	May 8-July 16			Do.
Hong Kong	May 8-July 30	19	18	
Manchuria:				
Anshan	May 22-28	1		
Changchun	May 15-July 30	8		
Dairen	May 2-July 3	10	5	
Fushun	May 15-July 30	10		
Harbin	June 13-July 10	4		
Kai-Yuan	July 3-9	2		
Mukden	May 22-July 30	6		
Pensihu	July 3-9	1		
Ssupingkai	May 8-July 9	3		
Tientsin	May 8-July 30	18		
Chosen	Feb. 1-May 31			Cases, 451; deaths, 195.
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr. 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr. 1-30	1		
Curacao	May 29-June 4	1		Alastrim.
Ecuador:				
Guayaquil	June 1-30	2		
Egypt	May 7-July 29			Cases, 21; deaths, 3.
Alexandria	May 21-June 17	4	1	
Cairo	Jan. 22-Apr. 15	14	3	
France	Apr. 1-June 30			Cases, 178.
Lille	July 24-30	1		
Paris	May 21-July 31	14	2	
Gold Coast	Mar. 1-May 31	33	7	
Great Britain:				
England and Wales	May 22-Aug. 20			Cases, 2,601.
Birmingham	Aug. 14-20	1		
Bradford	May 29-June 11	2		
Cardiff	June 19-July 2	4		
Leeds	July 17-Aug. 27	10		
Liverpool	July 17-30	1		
London	May 15-June 18	2		
Newcastle upon Tyne	June 12-Aug. 13	5		
Sheffield	June 12-Aug. 6	25		
Stoke-on-Trent	Aug. 21-27	1		
Scotland—				
Dundee	May 29-July 2	5		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 28, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Greece	June 1-30	14		
Saloniki	July 12-18		1	
Guatemala:				
Guatemala City	June 1-30		9	
Guinea (French)	June 4-10	9		
India	Apr. 17-July 16			Cases, 63,349; deaths, 16,595
Bombay	May 28-July 23	199	131	
Calcutta	May 8-Aug 6	374	286	
Karachi	May 15-Aug. 6	10	5	
Madras	May 22-Aug. 13	22	6	
Rangoon	May 8-July 30	169	52	
India, French Settlements in	Mar. 20-June 18	174	111	
Indo-China (French)	Mar 21-July 20			Cases, 314.
Saigon	May 14-20	1	1	
Iraq:				
Baghdad	Apr 10-16	2		
Basra	Apr. 10-July 16	2	1	
Italy	Apr. 10-May 21	13		
Rome	June 13-19	1		
Jamaica	May 29-Aug 27	30		Reported as alastrim.
Japan	Apr 3-May 7			Cases, 19
Nagasaki City	June 20-Aug 14	26	7	
Taiwan Island	May 21-31	1		
Java:				
Batavia	May 22-July 23	3		
East Java and Madura	Apr. 24-July 9	12		
Latvia	Apr. 1-30	1		
Mexico	Mar 1-31			Deaths, 162
Durango	June 1-30		1	
La Oroya	Apr 1 June 30			Present.
Monterey	July 1-31	6	4	
San Luis Potosi	May 29-Aug 13		11	
Tampico	June 1-July 31	1	2	
Torreon	Aug 7-13		1	
Morocco	Apr 1-June 30	154		
Netherlands India.				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in two localities
Pasir Residency	Apr. 30-May 6			Epidemic outbreak
Samarinda Residency	May 21-27			Do.
Nigeria	Mar 1-May 31	2,077	513	
Paraguay.				
Asuncion	July 10-23		2	
Persia				
Teheran	Feb. 21-May 22		8	
Poland	Apr. 10-July 9	17	2	
Portugal.				
Lisbon	May 29-Aug. 6	17	1	
Senegal.				
Medina	July 4-10	7		
Siam	Apr. 1-July 23			Cases, 168; deaths, 40.
Bangkok	May 1-July 23	13	7	
Spain:				
Valencia	May 29-June 4	2		
Straits Settlements	June 12-18			Cases, 3.
Singapore	Apr. 1-June 18	7	2	
Sumatra:				
Medan	June 5-11	2		
Switzerland:				
Berne	June 26-July 2	1		
Tunisia	Apr. 1-June 10			Cases, 10.
Tunis	June 1-10	1		
Union of South Africa:				
Cape Province	July 17-23			Outbreaks.
Elliott district	May 11-June 10			Do.
Idutywa district	July 3-9			Do.
Kalanga district	May 11-June 10			Do.
Transvaal—				
Barberton district	May 1-7			Do.
Venezuela.				
Maracaibo	July 12-18		1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 23, 1927—Continued

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr 21-July 20			Cases, 399, deaths, 39.
Algiers	May 11-July 31	26		
Oran	May 21-Aug 10	33		
Bulgaria	Mar 1 June 20			Cases, 206; deaths, 18.
Sofia	June 4-Aug. 5	2		
Chile:				
Antofagasta	Apr. 16-May 31	1		
Concepcion	May 29-June 4		1	
La Calera	Apr 16-May 31	1		
Ligua	Mar. 16-31	2		
Puerto Montt	Apr 16-May 31	1		
Santiago	do	5	1	
Talcahuano	July 10-16		1	
Valparaiso	Apr. 16-Aug 6	4	1	
China				
Manchuria—				
Harbin	July 25 31	3		
Mukden	May 29-June 4	1		
Tientsin	July 10-16	1		
Chosen	Feb 1 May 31			Cases, 512, deaths, 42.
Chemulpo	May 1-June 30	15	1	
Gensan	do	2		
Seoul	Apr 1-June 30	30	2	
Czechoslovakia	do			Cases, 49
Egypt	May 28 July 29			Cases, 120, deaths, 18.
Alexandria	May 21-Aug 5	13	5	
Cairo	Jan 15-Apr 22	30	8	
Estonia	Apr 1-June 30			Cases, 5.
Greece	June 1-30	2		
Athens	do		9	
Iraq:				
Baghdad	Apr 24-30	1		
Irish Free State:				
Cork County	July 3 9	1		In urban district.
Latvia	Apr 1-June 30	26		
Lithuania	Feb 1 June 30	303	37	
Mexico	Feb 2 Mar 31			Deaths, 88
Mexico City	May 29-Aug 7	40		Including municipalities in Federal district
San Luis Potosi	July 31-Aug 6		1	
Morocco	Apr 1-July 10	815		
Palestine	May 24 Aug 8			Cases, 16
Haifa	do	6		
Jaffa	Aug 2 15	2		
Jerusalem	June 28-Aug. 15	3		
Mahneim	May 17 23	1		In Safad district.
Nazareth	July 19-25	1		
Safad	May 17-Aug. 8	10		
Peru:				
Arequipa	Apr 1-30		1	
Poland	Apr. 10-July 9	1,009	92	
Portugal:				
Lisbon	May 29-June 4	1		
Oporto	Aug. 20 27	1		
Rumania	Apr. 3 June 25	923	61	
Spain.				
Seville	Aug 19-25		2	
Tunisia	Apr 22-July 20			Cases, 158.
Tunis	July 5-Aug. 21	2		
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa	Apr. 1-30			Cases, 55; deaths, 8, native. In Europeans, cases, 2.
Cape Province	Apr. 1-July 23	42	5	
Albany district	June 5-11			Outbreaks.
East London	May 22-28	1		Do.
Glen Gray district	May 1-7			Do.
Kentani district	June 26-July 2			Do.
Qumbu district	May 1-7			Do.
Umzimkulu district	June 26-July 2			Do.
Natal	Apr. 1-July 9	7	3	
Impendhle district	June 5-11			Do.
Orange Free State	Apr. 1-July 23	5		
Transvaal	Apr. 1-30	1		
Johannesburg	July 3-16	18	5	
Yugoslavia	May 1-July 31			Cases, 15; deaths, 4.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 23, 1927—Continued

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Ashanti:				
Obuasi	Aug. 6	1	1	
Dahomey (West Africa):				
Porto Novo	July 1	1	1	In Syrian woman.
Gold Coast	Apr. 1-May 31	45	20	
Do	Aug. 4	2		
Ivory Coast	July 29	1	1	
Liberia:				
Monrovia	May 29-July 8	4	5	
Senegal	May 27-July 31			Cases, 5; deaths, 2.
Dakar	July 9	1		
Do	Aug. 8	2	2	
Khombole	Aug. 1-14	3		
M'Bour	May 27-June 19	5	5	
Ouakam	June 2-Aug. 14	4	2	
St. Louis	Aug. 1-14	2	2	
Thies	July 10	1	1	In European.
Tivaouane	May 27-June 8	5	5	
Togoland:				
Meiatza	Aug. 15-21	1	1	

TREASURY DEPARTMENT

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SPECIAL ARTICLES

Prevalence of Poliomyelitis in the United States

A Discussion of the Diagnosis of Poliomyelitis

Diphtheria Prevalence in the United States, 1927

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HUGH S. CUMMING, Surgeon General

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Asst. Surg. Gen. R. C. WILLIAMS, *Chief of Division*

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PUBLIC HEALTH REPORTS

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POLIOMYELITIS IN THE UNITED STATES

The weekly telegraphic reports received from the State health officers for the 13 weeks from July 3 to October 1, 1927, show 4,570 cases of poliomyelitis, as compared with 1,228 cases for the corresponding period of 1926 and with 3,537 cases for the similar period in 1925. These current telegraphic reports may be incomplete in some instances. Approximately the same number of States are included in the comparisons. Forty-four States reported 635 cases of poliomyelitis for the week ended October 1, 1927, as compared with 681 cases for the preceding week reported by 45 States. A table showing the prevalence of poliomyelitis by States from January 1 to October 1, 1927, is printed on page 2452.

THE DIAGNOSIS OF POLIOMYELITIS [1]

By J. P. Leake, *Surgeon, United States Public Health Service*

Acute poliomyelitis is a name given to a specific infectious disease which sometimes, but not usually, results in paralysis. The ability to diagnose the disease in the absence of paralysis has only comparatively recently come to us, although Caverly, of Vermont, in 1894, and Wickman, of Sweden, in 1907, described such cases. If paralysis occurs, it is usually after the disease itself is well on its way, so that diagnosis of the nonparalytic stages and the nonparalytic cases is doubly important for the protection of contacts and for the institution of measures of treatment. Though preeminently a disease of children, it is by no means rare in adults; and the less urban the community the higher the average age of those affected. Thus for two reasons the frequently used term "infantile paralysis" is hardly a correct name for the disease.

Draper and Haynes have emphasized two stages in the progress of the disease—first, that of general, or systemic, symptoms, and, second, that of invasion of the central nervous system, by way of the meninges. They mention the interval of apparent recovery or improvement, which frequently occurs between these two stages, but that is

[1] Revision of a paper read before the Augusta County Medical Society at Staunton, Va., August 17, 1917, printed in the Public Health Reports, vol. 32, No. 44, Nov. 2, 1917, pp. 1831-1842, and issued as Reprint No. 431.

not the whole story; the disease is very commonly one of remissions at every stage. Though we can not speak with such assurance about the systemic stage, it is probable that here, also, as is repeatedly observed in the meningitic and in the paralytic stages, there are remissions and regressions.

The pathologic picture which will best convey the progress of the disease is first that of a general infection in a sick child or an indisposed adult; second, a meningitic invasion, from a very mild to a severe meningitis; and, third, in some cases an extension of the infection into the anterior horns of gray matter in the spinal cord and to a less extent into other parts of the central nervous system, with weakness, paralysis, and definite localized nervous symptoms. The stages may be clinically simultaneous, though usually meningeal signs precede an evident paralysis. Any two of these three stages may be absent, or at least so slight or transient as to pass undiscovered.

Systemic Symptoms

It must be admitted that the diagnosis in the general or systemic stage can be made only rarely, usually only in the presence of an epidemic. The symptoms may simulate any of the indefinite illnesses of childhood, and in the presence of an epidemic it is well for parents and physicians to treat sick children having fever without a definite proved diagnosis as possible cases of poliomyelitis. Still, there are groupings of symptoms which are very suggestive. Fever is the most common single symptom and may be of any grade. It is usually of short duration, and frequently accompanied by headache, sometimes by flushing. During the acute stage a moderate leukocytosis is usually present, though outbreaks with leukopenia have been described in Germany. The proportion of polynuclear cells varies with the age of the patient, but is not increased as a rule. It is remarkable that in this acute febrile disease, which occurs predominantly in the earlier years of life and which attacks the nervous system, convulsions should be so infrequent; though by no means unheard of, a history of convulsions in most epidemics inclines one against, rather than toward, the diagnosis of poliomyelitis.

The onset of this systemic stage is frequently insidious, but in many cases very acute and often accompanied with vomiting, as in scarlet fever. The vomiting, if it occurs, is not usually prolonged, and by many parents is attributed to an evident indiscretion in diet, and not to the disease. Occasionally there are pains in the stomach. Intestinal symptoms are very frequent, constipation more so than diarrhea. In reports of some epidemics, but none in which I have had personal experience, cases with diarrhea exceed those with constipation. This brings out the fact that in different epidemics, in different localities of the same epidemic, and in different periods in

the same locality, there may be minor differences in symptomology, fatality, and other characteristics of the disease, just as there are evidently differences in virulence and infectivity. Thus, in the Hessian epidemic of 1909, respiratory symptoms predominated, while in the neighboring Westphalian cases of the same year, and in the Stokes River, Devonshire, outbreak of 1911, diarrhea was prominent; the Vermont epidemic of 1894 and the Austrian of 1908 included a considerable proportion of onsets with convulsions. But the general picture throughout the world is so nearly uniform and so different from any other known morbid condition that even without our laboratory evidence we could not help regarding poliomyelitis as a distinct clinical entity, a specific infectious disease, just as different from other diseases as is diphtheria or tuberculosis.

One of the common symptoms which frequently aids in diagnosis at this stage is drowsiness; the child falls asleep repeatedly in the daytime. The opposite symptom, that of restlessness or irritability, is also encountered, even in the same patient; a naturally cheerful, playful child becomes cross and resents interference, objecting sometimes to being petted by its own mother. This change in disposition and the stupor are referable to the sensorium; but even though there may be absolute delirium or coma these do not constitute certain evidence of localized cerebral infection. Two other symptoms, which are very frequent and which when present tend to confirm the diagnosis, are the retention of urine and sweating to a degree out of proportion to the air temperature.

Sore throat is not uncommon, but other symptoms referable to the upper respiratory tract are rather rare, considering the fact that according to a widely accepted theory the virus enters the body by this route. The same peculiarity is observed in epidemic cerebrospinal meningitis.

This description covers the most common symptoms of this stage. Other symptoms, such as chills, cough, dizziness, or rashes, may occur but are not particularly suggestive of the disease. Herpes labialis is rare, an important point in differentiation from epidemic meningitis. It may be argued that there is nothing distinctive about this clinical picture, and that the symptoms enumerated are merely those which may occur in any sick child, and which may pass off without a definite diagnosis being made. But the combination of fever, vomiting, constipation, drowsiness, and irritability, especially when combined with headache, a transient flushing of the face, abnormal sweating, or retention of urine, is enough to make a tentative diagnosis of poliomyelitis if frank cases are occurring in the vicinity.

Cases with gradual onset, malaise, and indefinite symptoms can not be diagnosed before the appearance of meningeal or paralytic

signs, if such signs do appear; but an onset with one or more remissions is very suggestive of poliomyelitis. The more careful the inquiry into the histories, the more frequently will such onsets be found. The remissions are of varying length, and may be as long as one or more weeks.

Meningeal Symptoms

The greater part of the symptoms which I have described as systemic might also be included as evidence of involvement of the central nervous system. But the chief definite symptoms of the slight degree of meningitis commonly met with in poliomyelitis are pain on spinal flexion, hyperesthesia, and increased reflexes. Of these, pain on anterior flexion of the spine as described by Wickman and by Peabody, Draper, and Dochez, is perhaps the most frequent and characteristic. Enough meningeal involvement to cause real opisthotonos or retraction of the head is not the rule in poliomyelitis; but pain on forward nodding of the head, and especially pain on forward bending of the lower spine, is very frequent and characteristic. This latter sign is elicited by placing one of the examiner's arms under the flexed knees and the other under the patient's neck. On attempting to lift the patient in this way a voluntary stiffness and a pain in the back are elicited. In testing for this sign, as in examining the reflexes and motor functions to be mentioned later, it is of great importance to deal with the utmost gentleness. The patient is usually a child, and unless one can obtain his good will and confidence much of the examination is useless. It is well, therefore, to proceed first with the examination of the strength of various muscles and the reflexes before attempting manipulations which may cause pain. The degree of meningitis may or may not be sufficient to give a positive Kernig's sign—inability to extend the knee fully when the thigh is flexed at right angles to the body. One of the most persistent signs of the disease, often remaining after all acute symptoms have subsided, is popliteal pain, which, when investigated, is found to be due to hypertonicity of the hamstrings. Other signs of meningitis and consequent increased pressure of the cerebrospinal fluid, such as MacEwen's and DeLepinay's, also more complex signs, such as Brudjinski's, may be elicited. Even Babinski's sign, indicating involvement of the upper motor neurone, may rarely be present.

Definite evidence of meningeal inflammation may be obtained by lumbar puncture and examination of the spinal fluid. It goes without saying that this procedure should be followed if the meningeal symptoms are at all pronounced, in order to relieve the pressure and in order to rule out other forms of meningitis. The increased pressure with a clear or nearly clear fluid containing no organisms, a cell count over 10 per cubic millimeter, and increased albumin and globu-

lin, when found, are of great diagnostic value. But unless the puncture is made by one with some skill in the technique, and under proper aseptic precautions, more harm than good may be done. Flexner and Amoss have shown that even slight hemorrhage into the subarachnoid space may possibly determine an infection which would otherwise be warded off. A thorough examination of the patient and consideration of the history will, in the usual case, enable a diagnosis to be made as positively without as with a lumbar puncture.

One symptom attributed in part to meningeal involvement is pain, or rather hyperesthesia. The tenderness may be of the skin, on deep pressure of the muscles, or on motion of the joints. It is a most characteristic symptom of the disease, yet has frequently misled physicians into the diagnosis of rheumatism or of neuritis. The hypersensitiveness may be general, or of one part of the body only. This is very suggestive of peripheral inflammation, and one would hardly look to the spinal cord for an explanation unless on the watch for poliomyelitis. But no swelling accompanies the pain of poliomyelitis. The distribution of the tenderness, moreover, is not confined to certain joints or certain nerves, but involves areas corresponding rather to segments of the spinal cord.

One other word regarding sensory disturbance deserves to be emphasized for the sake of diagnosis. While the microscopic histology of the disease shows some involvement of the sensory tracts along with the predominant motor disturbance, and while at the beginning we have this clinical evidence of sensory irritation just as we have of motor irritation to be described later, in the case of the sensory system these changes only rarely go on to a degree of degeneration which is easily demonstrable in life. The "root fields" of the skin, corresponding to different segments of the spinal cord, overlap so much that it takes a considerable cord injury to produce loss of sensation in any area. To put it more plainly, anesthesia, if prominent, inclines one against the diagnosis of poliomyelitis. Local loss of sensation is found in some cases of the disease, but it is a minor feature. This is of especial help in the diagnosis of paralysis in adults; if the anesthesia approximates the motor paralysis in degree and extent, with a history dissimilar to that above outlined, the disease may indeed be anatomically poliomyelitis, that is, an inflammation of the gray matter of the spinal cord, but it is not the specific infectious disease which we call "acute poliomyelitis."

The motor phenomena of the meningitic stage may, like the sensory phenomena, be attributed to irritative lesions of the nerve cells rather than simply to a meningitis. One of the most noticeable of these phenomena is a tremor, brought out especially if the limbs are extended unsupported, or if muscular effort is attempted. The parents may also at times notice twitchings, but the tremor is more

characteristic of the disease. Unsteadiness in action, in gait, or in standing, may amount to a pronounced ataxia and has abundant explanation in the pathological anatomy of the disease.

In these examinations in the acute stage it is to be remembered that the chief therapeutic need is rest in bed, and a sick child should not be made to walk across the room, or to undergo muscular exercises more than are necessary to establish the diagnosis and to ascertain indications for local treatment. Usually the examination can be more successfully made by prolonging it over several visits, different portions of the body being examined each time. Physiologic rest in the proper posture often enhanced by supports or removable plaster casts to prevent the stretching of weakened or painful muscles, is indicated for the first month or two, any other treatment being subsidiary to this. Later, passive movements, massage, and especially muscle training, are to be begun; but for both these phases of treatment accurate anatomical diagnosis is essential, in addition to the mere knowledge of the existence and general distribution of the disease.

Hardly any part of the examination of the patient gives more valuable information in poliomyelitis than an examination of the reflexes, combined with which are tests of voluntary movement and tonicity of the muscles; electricity has not proved of much value in either diagnosis or treatment. In the irritative stage we are likely to find irregular increases in the reflex response, with perhaps some spasticity, and as a rule the earliest definitive sign of degenerative changes in the peripheral motor neurone is a diminution in one or more of the reflexes. This is especially important in young children; for in the age group most commonly attacked by poliomyelitis it is difficult to secure voluntary muscular effort at command, and one may be in doubt of anything short of an absolute flaccid paralysis, unless the break in the nerve conduction is revealed by definite absence of reflex. Fortunately, in young children, over one year of age, the reflexes are more regular and more easily elicited than in adults; adults seem to have more inhibitory paths. But even here care must be taken, by repeated trials and by testing under the most favorable conditions, before a reflex is put down as absent. A unilateral increase or decrease in reflexes, present on different examinations, is, of course, more significant than a symmetrical change. In this disease the deep reflexes, obtained by striking tendons, muscles, or bones, are supposedly more important than the superficial reflexes; but much valuable information can be obtained from the latter.

To obtain the deep reflexes, it is worth while to provide oneself with a proper percussion hammer. The percussion hammers sold at present are all unsuitable for this work. The rubber is usually too

hard and the weight in some cases insufficient for older children and adults. The hammer which I use may be improvised from stout wire and two rubber erasers. The rubber should above all be very soft, so that one can demonstrate its pliability to the patient, and so that a sharp blow really gives no pain. Into a slot at one end of the twisted or soldered wire handle is inserted the smaller eraser, a common red or green desk eraser with beveled ends about 2½ inches by ⅝ by ⅜ inch, for percussing the tendons of very small infants. For larger children a larger eraser has been found to be more satisfactory. This may be purchased at draftsmen's or artists' supply shops and is about 2⅜ inches by 1¾ inches by ½ inch and very soft. To aid the precise percussion of a tendon one end and one side of the eraser may be beveled with a sharp knife. It is convenient to carry this heavier eraser separate in the pocket and to insert it in the broader end of the handle of the hammer, which is then reversed for use when needed.

Of the deep reflexes one of the most important is the patellar, or knee jerk. This is best elicited, not as is described in some textbooks by supporting the leg under the knee with the examiner's arm or the edge of the bed or chair, but by allowing the quadriceps muscle to relax as completely as possible, the patient being recumbent, the heel resting on the bed, and the knee semiextended at an angle of about 120°. The knee should be hit repeatedly just above the tibial tuberosity and the response of the muscle ascertained by the examiner's hand on the thigh; true contractions are thus distinguished from mere jarring. Sometimes part of the muscle may respond more actively than the remainder. The reflexes in the knees should be accurately compared, one side with the other. Significant differences in response, short of total abolition, may be obtained.

In many adults and some young children there is need to reinforce the reflexes, as it is called, by diminishing the inhibition and tonicity. A method usually successful is to distract attention and cause muscular effort to be made in another part of the body; thus if the knee jerks are being tested the patient is directed to try to pull his clasped hands apart, while looking in another direction.

The Achilles tendon reflex, or ankle jerk, is no less important than the knee jerk in this disease. Other deep reflexes which may be obtained with greater or less regularity in young children are the biceps, elicited by a blow on the arm 1 inch above the fold of the elbow; the triceps, obtained by hitting the back of the arm 1 inch above the olecranon; the scapulo-humeral, giving adduction of the arm on striking the inner side of the scapula with the hammer; the radial, giving supination of the forearm in response to a blow on the styloid process; the hamstring, giving flexion of the leg on percussion of the tendons back of the knee; the tibialis anterior, a blow on

the tendon external to the lower third of the tibia causing flexion and inversion of the ankle; and the peroneal, a blow on the tendon above and behind the external malleolus. It may be remarked that some of these reflexes are not always obtainable in health, but we have the two sides of the body for comparison, and even with the lesser reflexes a constant discrepancy between the two sides is significant. Increase of reflexes in the irritative stage is as important as decrease in the paralytic stage.

Of the superficial reflexes, those of the trunk are of the greatest importance in this disease, for they may give a hint of oncoming paralyses in muscles of the back and abdomen. These paralyses are often overlooked, but are of serious moment on account of resultant disability and deformity. The lumbar reflex is a contraction of the lumbar muscles in response to stroking the skin of the back below the twelfth rib. Half of a wooden tongue depressor which has been broken diagonally is a good instrument for eliciting the superficial reflexes; a pin point is somewhat too sharp. The epigastric reflex is a drawing in of the epigastrium caused by stroking from either nipple downward. The upper, middle, and lower abdominal reflexes consist similarly in localized contractions of the anterior abdominal wall on local irritation of the overlying skin surface. The gluteal reflex, a contraction of the gluteal muscles when the fold of the nates is stroked, is also of considerable importance in this disease. Other useful superficial reflexes are the scapular, elicited by stimulating the skin internal or external to the scapula; the pectoral, an adduction of the arm when the anterior axillary fold is stroked; the cremasteric in the male obtained by stroking the inner thigh; and particularly the plantar, the normal response being a flexion of the toes when the sole is stroked, usually accompanied by a drawing up of the foot, thus demonstrating activity on the part of the anterior tibial, hamstring, and hip flexor muscles.

Some of these reflexes may be found to be exaggerated in the irritative stage, and later diminished or abolished. Diminution of reflexes is probably a step in the direction of paralysis; it is likely, in fact, that if the muscular strength could be tested accurately, some weakness would be made out in those cases where a reflex is definitely decreased. One may be in doubt as to whether a reflex not obtained may be due to natural inhibition or to the disease, but we always have the corresponding reflex on the other side of the body for comparison and with this considerable list some asymmetry is likely to be made out if there is any real motor disturbance.

Even in the absence of an epidemic, a clinical picture such as that described in the preceding section under the heading Systemic Symptoms, combined with pain or resistance on spinal flexion, local hyperesthesia, and tremor, would be sufficient for a presumptive

diagnosis of poliomyelitis in the absence of signs more indicative of some other disease. An asymmetrical reflex disturbance would make this diagnosis more certain, though if the meningeal signs were at all pronounced, other forms of meningitis should first be ruled out by lumbar puncture. No one of these signs or symptoms is necessary, however, and in the presence of an epidemic diagnoses can be made on much less. The more characteristic some of the symptoms are, the less is required in confirmation. Pneumonia and some other severe acute illnesses of childhood may cause meningeal symptoms; the physical examination of the patient should be thorough enough to discover these diseases if present. From findings at lumbar puncture and at necropsy and from most clinical histories it may be doubted whether the paralysis of poliomyelitis ever occurs without some degree of meningitis; but the physician is frequently called to cases where history and evidence of definite meningeal symptoms are both lacking.

Paralytic Symptoms

As the diminution in reflex responses is, strictly speaking, a part of the paralytic phenomena, so also is a general weakness which is often encountered. This weakness is out of proportion to the febrile disturbance and may keep the patient from his usual activities for some time without even being definitely localizable to certain muscle groups. This is one of the reasons for the confusion, which once arose, of poliomyelitis with influenza. It is needless to say that poliomyelitis is a perfectly definite disease, proved by the occurrence of typical paralytic cases with characteristic pathology, while under the name of influenza, in the absence of an epidemic, we tend to hide many illnesses the causation of which we do not know. It might well be that some of our cases called influenza are really unrecognized poliomyelitis, but we can hardly say that influenza is responsible for infantile paralysis when we do not know the cause of influenza. We do not know the cause of poliomyelitis; that is, we know that it is a filterable virus with certain definite properties.

In regard to the paralysis in poliomyelitis, I desire to emphasize four points:

1. A great proportion of the cases, probably the majority, are not recognized as paralytic. These nonparalytic cases have, in the past, been reported in considerable numbers only where epidemics have been very carefully studied. In many instances, in fact, paralysis has been the criterion for diagnosis, and it is right that only paralytic cases should be counted officially for recording the prevalence of the disease and for such legal restrictions as are imposed.

2. Even in the paralytic cases, weakness is the rule, absolute paralysis occurring in less than 20 per cent of the muscle groups affected. If at the bedside we could apply to the transitory cases delicate tests,

such as Lovett's spring-balance test for muscle function and Martin's electrical sensory test, it is likely that we should find slight degrees of impairment of motion and of sensation much more common than at present.

3. The paralysis, when it occurs, is typically flaccid. There may be increased tonicity in the early stages, but in poliomyelitis permanent spastic paralysis is rarer than anesthesia.

4. Though examples are on record of involvement of the nucleus of every cranial and spinal nerve, the distribution of the paralysis is to some extent typical. Certain muscles are much more commonly affected than others, and at times a slight impairment of a single muscle determines the diagnosis.

The legs are more often paralyzed than any other region, the occurrence of toe drop testifying to the frequent involvement of the lower leg muscles. The toe muscles themselves are usually spared. Weight bearing appears to have a deleterious influence on recovery, so that in the old cases, especially, leg paralyses are greatly in excess. Arm paralyses follow next in frequency, particularly those involving the deltoid muscle. In regard to paralyses in other parts of the body, statistics vary in different epidemics and with different observers, not only on account of variations in the degree of delicacy in tests for muscle function, but also because in some series the observations are made early in the acute stage and in others later, when muscle training or other orthopedic treatment is begun; the paralyses of some muscles tend to be very transient and to clear up before the period of isolation is past.

The most common head muscle to be affected is the external rectus of the eye, giving convergent squint. This paralysis of the abducens muscle is often incomplete, and the attempt to obviate double vision may cause enough eye strain to produce ocular congestion. Slight degrees of facial palsies are very frequent, more so than the records would indicate, because recovery is usually prompt in bulbar cases of this sort, and because the palsies are often so slight as to be unnoticed even by the child's parents. The paralysis may be detected only in certain positions of the face; one eyelid or one side of the mouth may droop. Forced movements, such as grinning, or whistling, or raising the eyebrows, will at times bring out the asymmetry, at other times mask it. Throat paralysis, causing difficult swallowing, aphonia, or regurgitation through the nose, is a very serious symptom. Many such cases prove fatal, whether the fatality be due to paralysis of the bulbar centers of respiration, to extension of the paralysis to the neighboring centers of the phrenic nerve in the cervical cord, or to local paralysis in the throat and consequent pulmonary infection. Poliomyelitis typically affects the ganglion cell of the lower motor neurone, and not the higher centers; certainly the great

majority of fatalities from poliomyelitis are due to paralysis of the muscles of respiration directly; that is, the spinal nuclei of the phrenic and intercostal nerves.

Slight pareses of the neck muscles may be detected in an asymmetrical position of the child's head when upright or in an inability to raise or turn the head against pressure when recumbent. Affection of the abdominal and back muscles may be revealed by the skin reflexes previously mentioned, or by lack of strength in certain trunk movements and postures, or even by local bulging of the abdominal wall.

As with the facial and abdominal paralyses, slight degrees of intercostal paralysis are frequently overlooked. A child's breathing is chiefly abdominal, though slightly intercostal, also; but in poliomyelitis wards, cases of entire intercostal inactivity in ordinary respiration are very common. Diaphragmatic paralysis is the most serious phase of poliomyelitis, particularly when combined with intercostal paralysis. It is easily detected in severe cases, the abdomen moving inward in inspiration instead of outward. Severe intercostal paralysis, on the other hand, causes a sinking of the chest wall in inspiration. A piece of cotton may be held near the child's mouth to get the respiratory rhythm in these reversed cases. With such severe paralysis the prognosis is very bad. This respiratory paralysis usually forms a part of the picture in the cases called Landry's paralysis, an ascending or descending paralysis involving other muscles as well. The respiratory difficulty, as a rule, is not like that in laryngeal diphtheria or croup; there is little stridor, or evident muscular exertion in breathing, the patient being too weak. Lesser degrees of intercostal or diaphragmatic palsy may be detected by compressing the abdomen or the chest to watch for consequent respiratory difficulty.

In some of the fatal cases death is so sudden that the cause is not apparent. Indefinite symptoms may have preceded for one or more days without the paralysis being evident to either parents or physican, especially in infants and younger children. Yawning has been frequently observed as a very serious symptom. During the prevalence or suspected prevalence of poliomyelitis it is wise to require necropsies with histological examination of the spinal cord and brain in all the acutely fatal illnesses in children, unless the cause of death can be clearly established to be other than poliomyelitis. Many histories obtainable after death are not at all suggestive of the disease, though microscopic examination demonstrates poliomyelitis in the cervical cord.

In the upper extremity the deltoid is the muscle most typically involved. Tests for the function of this muscle may be made in the upright position by allowing the baby to reach for the percussion hammer or some other object held above his head, first with one

hand and then with the other, or by playing up and down with the arms until the tonicity and muscular strength in each may be estimated. Except the opponens pollicis, which orthopedic tests have shown to be very commonly attacked, the muscles most often impaired in this extremity are those of the shoulder and upper arm.

In the lower extremity, the gastrocnemius and the anterior tibial and lower leg muscles bear the brunt of the attack, though here no part is spared. It has long been recognized that the virus of the disease appears to have an affinity for the lumbar enlargement of the spinal cord. Trivial paralysis or paresis of leg muscles is to be searched for by stimulating the action of each group; with older children the different movements can be asked for systematically, but in infants such reflexes as the plantar must be used. Besides testing the strength of the flexors and extensors of the hip, knee, ankle, and toes, one should not neglect the abductors and adductors of the hip. Comparison of the strength of the two sides is easily made by having the patient recumbent, the knees flexed, with the heels resting on the bed; slight degrees of weakness in ability to bring the knees together or to separate them against the pressure of the examiner's hands may thus be detected. One peculiarity is that paralysis of the rectal and urinary sphincters is unusual except in completely paralyzed, fatal cases.

All motions of the limbs should be made by the examiner repeatedly, to detect lack of tonus and of resistive efforts which may be very definite in the youngest baby, and even in an unruly child. Gait, going up and down stairs and on the level, should be observed in ambulatory cases; also the steadiness with which the patient can stand with eyes closed. The older the patient, the more complete is the examination and the less obscured are the slight degrees of muscular impairment. It is not to be expected that all these tests and reflexes will be made on every patient at the first visit, but enough should be completed to establish the diagnosis; and the more data one has, the more certain will the conclusions be. The patient should in any case be stripped and given an examination thorough enough to exclude other diseases. A complete account of the differential diagnosis would involve a long treatise. Two of the diseases which must always be considered, in addition to those already mentioned, are epidemic or lethargic encephalitis and tuberculous meningitis.

It is evident that the diagnosis of poliomyelitis is not a simple matter, depending on a single factor or sign, but that the whole history and physical examination must be taken into consideration; and, when that is done, there are enough idiosyncrasies and predilections of the disease to enable a diagnosis to be made with as great certainty as is usual in the diagnosis of other diseases, even without what was formerly considered the essential feature of the malady—permanent paralysis.

DIPHTHERIA IN THE UNITED STATES

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The reports received by the Public Health Service showed that the incidence of diphtheria for the year 1926 was the lowest ever recorded in the United States; but during the early months of 1927 a decided increase in the numbers of cases and deaths was noted.

Since 1900, when annual publication of death statistics was begun by the Bureau of the Census, there has been a general decrease in the diphtheria death rate. There is no doubt that the rates prevailing at the beginning of the present century were lower than those of a few decades earlier, but comparable general statistics are not available for years before 1900.

The Bureau of the Census has reported the diphtheria death rates since 1900 in the death registration area of the United States as follows:

Year	Diphtheria deaths per 100,000 population	Year	Diphtheria deaths per 100,000 population
1900	43.3	1913	18.9
1901	34.0	1914	17.9
1902	30.8	1915	15.7
1903	31.7	1916	14.5
1904	28.3	1917	16.6
1905	23.6	1918	13.9
1906	25.7	1919	14.7
1907	23.6	1920	15.3
1908	21.5	1921	17.7
1909	20.4	1922	14.6
1910	21.4	1923	12.1
1911	18.9	1924	9.4
1912	18.2	1925	7.8

The death registration area included 40.5 per cent of the population of the United States in 1900 and 89.4 per cent in 1925.

A similar decline in the death rate from diphtheria is shown by the experience of the Metropolitan Life Insurance Co., which covers part of Canada in addition to the United States. The following figures are taken from the Bulletin, issued by that company for the month of January, 1927:

Death rates from diphtheria per 100,000 population in the industrial department, Metropolitan Life Insurance Co.

Year	Rate	Year	Rate
1911	27.3	1921	23.8
1916	21.0	1922	18.0
1917	24.6	1923	15.5
1918	19.3	1924	12.7
1919	20.9	1925	10.2
1920	22.1	1926	9.5

The following table gives a summary of the diphtheria case and death rates computed from reports of State health officers to the Public Health Service from 1916 to 1926, inclusive:

Year	Number of States included	Cases per 100,000 population	Deaths per 100,000 population	Deaths per 100 cases
1916	24	131.7	12.3	9.4
1917	35	136.1	14.2	10.5
1918	33	107.4	12.6	11.7
1919	32	139.7	12.9	9.2
1920	35	156.7	14.4	9.2
1921	43	204.0	16.5	8.1
1922	44	164.1	14.2	8.7
1923	46	133.3	11.5	8.6
1924	46	107.3	8.8	8.2
1925	46	85.2	7.6	8.9
1926	41	80.5	7.1	8.8

The above figures show that there was a general increase in diphtheria cases and deaths for several years prior to 1921, with a steady decrease from 1921 to 1926.

These wavelike movements, covering a period of several years, are characteristic of the history of the disease, but the later waves are generally lower than those preceding, as the general trend has been downward.

The following table shows the number of cases of diphtheria reported for the first six months of the years 1920 to 1927, inclusive, by the health officers of 35 States. These States include all for which data for the full eight-year period are available at the time of writing.

1920	54, 928
1921	74, 560
1922	60, 820
1923	55, 603
1924	54, 960
1925	41, 020
1926	33, 684
1927	45, 165
Total	420, 740

The incidence of diphtheria was greater during the first half of 1927 than during the corresponding period 1925 or 1926, but less than that for the similar period of any preceding year.

The case rate for the first half of 1927, figured on an annual basis, is 97.04 cases per annum per 100,000 population. This rate, however, does not appear to be fairly comparable with rates for the full year, as diphtheria has a marked seasonal prevalence, being usually most prevalent during October, November, and December.

The reports for the earlier months of 1927 were relatively more favorable than the reports for the later months of the half year, as

shown by the following table, which gives a comparison, by months, of the cases of diphtheria reported during the first six months of 1927 with the average number for the corresponding months of the seven-year period 1920 to 1926.

Diphtheria cases reported for first six months of 1927, compared with the averages for the first six months of the years 1920 to 1926, inclusive

Month	Average number of cases reported, 1920-1926	Cases reported, 1927	Per cent decrease
January	12, 901	8, 808	31. 7
February	9, 715	7, 739	20. 3
March	9, 176	8, 081	11. 9
April	7, 781	7, 311	6. 0
May	7, 462	6, 828	8. 5
June	6, 618	6, 398	3. 3
Total	53, 653	45, 165	15. 8

A comparison of the reports arranged according to sections of the country shows that all of the general divisions except the West North Central and the Mountain States had higher rates for the first six months of 1927 than for the corresponding period of 1926.

The following table gives a comparison of the numbers of cases of diphtheria reports in different sections of the country during the first half of 1927 with the average number reported during the corresponding period of the years 1920 to 1926, inclusive.

Average number of cases of diphtheria reported in 35 States[1] *during the first six months of the years 1920 to 1926, compared with the first six months of 1927*

	Average number of cases reported first six months, 1920-1926	Number of cases reported in first six months of 1927	Per cent increase (+) or decrease (−) in 1927
35 States[1]	53, 653	45, 165	−15. 8
New England States	5, 746	3, 630	−36. 8
Middle Atlantic States	19, 844	18, 372	−7. 4
East North Central States	13, 317	9, 977	−25. 1
West North Central States	3, 831	2, 215	−42. 2
South Atlantic States	4, 250	4, 687	+10. 3
East South Central States	727	1, 112	+53. 0
West South Central States	384	536	+39. 6
Mountain States	388	286	−26. 3
Pacific States	5, 166	4, 350	−15. 8

[1] The States included are: *New England States*—Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut; *Middle Atlantic States*—New York, New Jersey, and Pennsylvania; *East North Central States*—Ohio, Illinois, Michigan, Wisconsin; *West North Central States*—Minnesota, Iowa, North Dakota, South Dakota, Nebraska and Kansas; *South Atlantic States*—Maryland, District of Columbia, Virginia, West Virginia, North Carolina, Georgia, Florida; *East South Central States*—Alabama and Mississippi; *West South Central States*—Louisiana; *Mountain States*—Montana, Idaho, Wyoming, and Arizona; *Pacific States*—Washington, Oregon, and California.

Data as to deaths from diphtheria during 1927 are not available for most of the States, but reports from cities include the number of deaths as well as of cases.

The following table gives the number of cases of diphtheria, with the number of deaths from this disease, and the fatality rate, in 16 large cities of the United States during the first 28 weeks of the years 1920 to 1927, inclusive. The cities included are Baltimore, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, Milwaukee, New York, Newark, Philadelphia, Pittsburgh, St. Louis, San Francisco, and Washington. These are the cities having 400,000 population or over in 1920.

Diphtheria cases, deaths, and fatality rates in cities having more than 400,000 population, for the first 28 weeks of the years 1920 to 1927, inclusive

Year	Cases	Deaths	Deaths per 100 cases	Year	Cases	Deaths	Deaths per 100 cases
1920	26,086	2,210	8.5	1924	21,804	1,466	6.7
1921	32,724	2,165	6.6	1925	17,864	1,208	6.8
1922	22,668	1,786	7.9	1926	15,556	1,184	7.6
1923	20,458	1,490	7.3	1927	22,949	1,475	6.4

Rates would give a better basis for comparison than the number of cases and deaths, as all of these cities are increasing in population, but, unfortunately, authoritative population estimates are not available for the later years for some of the cities.

The Statistical Bulletin of the Metropolitan Life Insurance Co. for July, 1927, gives the following comparison of the diphtheria death rates per 100,000 persons exposed in the company's industrial department for the first six months of the years 1925, 1926, and 1927:

	Death rate
White:	
January–June, 1925	12.7
January–June, 1926	10.1
January–June, 1927	11.8
Colored:	
January–June, 1925	5.3
January–June, 1926	6.2
January–June, 1927	6.7

It is evident that the remarkable decline in the prevalence of diphtheria which has been noted since the year 1921 was checked during the early months of 1927. The reaction is similar to the beginning of the upward movement of one of the waves which have been frequent in the history of diphtheria since records have been kept. If the disease follows the usual course, an increase in the number of cases may be expected. This statement should not be taken as a prediction, however, since the expectation of an increase due to natural causes may be offset by the more general employment of artificial immunization.

THE DIPHTHERIA SITUATION IN CHICAGO

By Herman N. Bundesen, M. D., Sc. D., *Commissioner of Health, Chicago, Ill.*

Health administrators in most large cities of this country, and, according to recent reports from Germany, in that country also, have noticed a marked increase in diphtheria mortality since the beginning of 1927. There has also been a perceptible increase in the morbidity rates from diphtheria, but this has been less notable than the increase in mortality.

In Chicago this increase first became noticeable in January, when the number of deaths from diphtheria rose to more than double the number recorded in January, 1926. For the first seven months of this year the number of diphtheria deaths has been nearly double the number for the corresponding period in 1926 and the number of cases recorded has been 50 per cent greater than for the same period last year.

At the same time, reports from practicing physicians and from the Municipal Contagious Disease Hospital called the attention of the health department to the unusually malignant type of diphtheria prevalent in the city. Patients seen on the second or third day of the disease, most of whom receiving an adequate dosage of antitoxin usually recover, often fail to respond to the regular treatment, and some cases given antitoxin within 24 hours of onset have died in spite of what is ordinarily considered adequate dosage. The septic, or so-called "bull-necked," type of diphtheria has been unusually prevalent and highly fatal.

Laryngeal diphtheria has not prevailed to any unusual extent. For the first seven months of this year 16 per cent of the cases admitted to the Municipal Contagious Disease Hospital were recorded as laryngeal, as compared with 16.6 per cent of all cases for the corresponding period in 1926.

That the type of diphtheria occurring in Chicago is actually more malignant than that experienced recently is further indicated by the fatality rates among patients in the Municipal Contagious Disease Hospital. During the first seven months of 1926 there occurred 30 deaths out of 259 admissions, a case fatality rate of 11.6, while up to August 1, this year, 71 deaths in a total of 467 admissions were recorded, making a case fatality of 15.2.

Analysis of the age distribution of cases of and deaths from diphtheria in Chicago shows no significant changes during the recent increase of the disease. There has been a slight relative change in the proportion of deaths in children under 5, especially since 1924, as shown by Table 1.

Diphtheria in Chicago, 1916–1927—Percentage of deaths under 5 years of age

	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Per cent under 5 years	65.8	60.6	62.3	62.7	58.0	60.5	63.1	58.1	57.0	43.0	52.2	52.7

There have been no selective geographical grouping of cases and no undue prevalence in any special racial or economic groups in the past year. Three or four moderate school outbreaks have been recorded, and two or three neighborhood foci of infection have been detected, but there has been no evidence that any common factors, such as milk or food, have in any way contributed to the spread of infection.

The occurrence of diphtheria in Chicago since 1915, by morbidity, mortality, and case fatality, is presented in Table 2.

TABLE 2.—*Diphtheria in Chicago—Morbidity, mortality, and case fatality rates 1916–1927*

Year	Rates per 100,000		Case fatality	Year	Rates per 100,000		Case fatality
	Morbidity	Mortality			Morbidity	Mortality	
1916	277.3	31.5	11.3	1922	260.0	19.8	7.6
1917	400.4	48.2	12.0	1923	202.1	12.6	6.2
1918	217.7	27.7	12.6	1924	124.9	7.3	5.9
1919	237.8	22.1	9.3	1925	97.7	8.0	8.2
1920	284.5	23.1	8.1	1926	83.4	7.4	8.8
1921	334.9	24.3	7.2	1927 [1]	126.6	12.8	10.1

[1] 7 months, on annual basis.

From inspection of the data and the accompanying chart several facts are apparent—

1. That no significant reduction in the morbidity rate occurred from 1916 until 1923.

2. That the morbidity declined rapidly from that time until 1927.

3. That the mortality rate had declined fairly steadily from 1917 up to 1927 and that it declined more rapidly than the morbidity rate from diphtheria.

4. That the case fatality had fallen consistently from 1918 to 1925, and during that time was an important factor in the decline of the mortality rate.

5. That although the morbidity rate continued to fall up to the beginning of 1927, the case fatality has been rising sharply since 1924 and at present is higher than at any time since 1918.

SUMMARY

(1) During the first seven months of this year, 50 per cent more cases of and nearly 100 per cent more deaths from diphtheria have occurred in Chicago than were recorded for the corresponding months of 1926.

(2) This increase in the death rate from diphtheria has been due in part to a corresponding increase in morbidity, but the major factor has been a marked rise in the case fatality rate of the disease.

(3) Clinically, the type of diphtheria in Chicago this year is more malignant than that for several years past. The severe toxic and septic cases often fail to respond to treatment, even when antitoxin is given early and in usually adequate doses.

(4) The greater prevalence of diphtheria in Chicago during 1927 has not been due to infection by milk, food, or epidemic foci, but represents a generalized increase in the endemic rate.

DIPHTHERIA IMMUNIZATION IN CHICAGO

In a recent communication Dr. Herman N. Bundesen, Commissioner of Health of Chicago, has the following to say regarding diphtheria immunization in that city:

Immunization with toxin-antitoxin was begun in Chicago in 1918, since which time a total of 211,500 toxin-antitoxin injections have been given.

For the past four years the greater part of diphtheria immunization in Chicago has been performed on the younger groups of school children. Toxin-antitoxin has been offered to all children for whom parental consents could be obtained in the kindergarten and first grade of all schools. Free immunization has also been offered on Saturday mornings at 10 infant welfare stations, for the purpose of reaching children of preschool age.

In view of the increased prevalence and fatality of diphtheria this year in Chicago, the city health department has started an intensive campaign to secure the immunization of a majority of children in the more susceptible age groups.

Every physician in the city has been advised of the diphtheria situation and urged to immunize as many children as possible in his private practice. Toxin-antitoxin for this purpose is supplied free by the department of health.

A health department bulletin on diphtheria and toxin-antitoxin has been sent to the mother of every child in Chicago under 2 years of age.

To give further publicity to the campaign, numerous talks on the use of toxin-antitoxin are being broadcast by members of the health department, articles are being published in the leading newspapers, and translations of these articles appear in the foreign-language papers.

Since all children immunized are under 7 years of age, the requirement of a preliminary Schick test has been omitted and all children for whom parental consents are obtained are given the three injections of toxin-antitoxin.

To facilitate the immunization of preschool children, parents are allowed to bring younger brothers and sisters of children in the kindergarten or first grade to the school clinics for the prophylactic treatments. Also the number of preschool clinics at infant welfare stations has been tripled and sufficient staff has been provided to handle the extra work.

The Infant Welfare Society, the Visiting Nurse Association, and other child health organizations are cooperating with the health department in every possible way to speed up the work of immunization.

Immunization of nurses on the staff of the Municipal Contagious Disease Hospital has been a routine procedure since 1918. All nurses are Schick-tested on admission, and those found to be susceptible to diphtheria are immunized with toxin-antitoxin. Since 1918 no cases of diphtheria have developed among nurses so immunized.

DIPHTHERIA IN NEW YORK CITY

According to the Weekly Bulletin for September 10, 1927, published by the Department of Health of New York City, the first six months of 1927 have recorded an increase in diphtheria morbidity and mortality in that city which emphasizes "the need of immunizing all young children with toxin-antitoxin." Although this rise causes some surprise and apprehension, the decline in the morbidity and mortality rate for diphtheria in New York City for the first seven years has been irregular, as shown by the following figures:

Year	Cases	Deaths	Year	Cases	Deaths
1919	14,014	1,239	1923	8,030	547
1920	14,166	1,045	1924	9,687	714
1921	15,110	891	1925	9,051	663
1922	10,427	874	1926	7,531	477

The Bulletin states:

This marked though irregular decrease has been attributed partly to the general campaign against diphtheria, and partly to the immunization with toxin-antitoxin.

Those who have been studying the diphtheria situation know that there are several factors which influence the incidence of this disease, as a result of which there is an increase over a period of two or three years, and then a decrease. There is every reason to believe that the slight increase during the first half of 1927 is simply due to one of those unknown factors which, in the course of every year or two, cease to exist. Then those influences which are steadily resulting in an improvement will make for a rate lower than the previous record. For this reason the full value of toxin-antitoxin can not be determined in New York City simply by the number of cases of diphtheria and by the number of deaths occurring in any one year. This is doubly true, for in spite of the large number of children who have been immunized, only a small percentage of the younger children have received this protection. It is well known that most of the cases and practically all of the deaths occur among preschool children. The immunization of this group by the private physician and by the health department inspectors has only begun.

The Bulletin also gives some interesting data regarding the administration of toxin-antitoxin, based on 150 cases of diphtheria reported by physicians. The information was furnished by the Research Laboratory of the department of health. Only three, or 2 per cent, of the patients had received toxin-antitoxin. In none of the cases had the three months elapsed which is usually required to develop immunity, and one of the patients had received only two injections. In one of the three patients receiving the toxin-antitoxin the diagnosis was doubtful. The figures are given below:

Report of an investigation of 150[1] diphtheria cases to determine the percentage having had toxin-antitoxin previous to present illness (July 9, 1927)

Age	Mild	Moderate	Severe	Total
Up to 5 years	36	23	[3] 16	75
6 to 10 years	[2] 32	[4] 11	9	52
11 to 15 years	8	1	2	11
16 years and over	4	7	1	12
Total	80	42	28	150
Number of cases having received toxin-antitoxin	1	1	1	3

[1] In all, 155 cases were investigated, 5 of these proving to be simply bacillus carriers, 2 of which had received toxin-antitoxin. These are excluded.
[2] In 1 case series of injections complete, but insufficient lapse of time. (Received 3 injections of toxin-antitoxin 2 months previous to present illness.)
[3] 1 case of doubtful diagnosis. Possibly only an influenzal pharyngitis.
[4] In 1 case immunization incomplete; insufficient lapse of time. (Received 2 injections of toxin-antitoxin 4 weeks previous to present illness.)

INCREASE OF DIPHTHERIA IN BERLIN

According to the correspondent of the Journal of the American Medical Association in Berlin, there was an increase in both the prevalence and case mortality of diphtheria in that city in 1926. The correspondent states:[1]

Since the introduction of diphtheria antitoxin in 1894, the morbidity and the mortality of diphtheria have decreased. In Berlin, since the beginning of 1926, the number and the character of diphtheria cases have undergone a change, and cases of malignant diphtheria have been observed, together with a rather high mortality. The special characteristics are foul smelling discharge from nose and mouth, marked glandular swellings, and all the symptoms of vascular disturbances, including numerous hemorrhages. In the majority of these cases, after a relatively short illness, death ensues from cardiac paralysis, supplemented by a grave kidney involvement. Last year two members of the department of infectious diseases of the Rudolf-Virchow Municipal Hospital published a report on the cases occurring in that hospital. The percentage of fatal cases increased from 6 in 1923 to 17 in 1926, and in Old-Berlin the total number of diphtheria cases increased from 1,068 in 1923 to 1,421 in 1926, and the percentage of mortality rose from 7.58 to 11.1 per cent. The statement was made that, in these cases of grave diphtheria, diphtheria antitoxin often fails to protect. Only by beginning the treatment at the earliest possible moment and employing the maximum doses was there any prospect of preserving life. * * * In the Deutsche Medizinische Wochenschrift, the observations made in the Rudolf-Virchow Hospital have been confirmed by Professor Finkelstein and his assistants in the municipal children's hospital. They also saw many severe cases of diphtheria, and they, too, are of the opinion that in most of the cases there was a streptococcus infection. They could not accomplish much with diphtheria antitoxin.

It is stated that considerable success attended the use of the streptococcus antitoxin of Prof. Fritz Meyer, of Berlin, an antitoxic serum obtained by immunizing horses with highly virulent streptococci and also with a highly potent streptococcus toxin. A marked advantage of this serum as compared with other streptococcus serums is stated to be in the fact that its potency is assured not only by so-called polyvalence but also because it contains demonstrable antitoxins against the poisons common to all streptococci. In the treatment of 18

[1] J. A. M. A., Sept. 17, 1927, p. 982.

patients between January and June, 9 patients were given only diphtheria antitoxin and 9 diphtheria antitoxin and the streptococcus serum, with results decidedly in favor of the latter. It is noted, however, that the series of cases is too small to furnish an adequate basis for conclusive judgment.

CASES OF POLIOMYELITIS REPORTED BY STATES, JANUARY 1 TO OCTOBER 1, 1927

The table below shows the prevalence of poliomyelitis in the United States from January 1 to October 1, 1927, as reported to the United States Public Health Service by the State health officers. These reports are preliminary and the figures may be incomplete in some instances.

Cases of poliomyelitis reported by State health officers, January 1–October 1, 1927

State	January	February	March	April	May	June	July	Week ended—								
								Aug. 6	Aug. 13	Aug. 20	Aug. 27	Sept. 3	Sept. 10	Sept. 17	Sept. 24	Oct. 1
Alabama	1	1	2	2	0	5	2	0	1	2	1	0	0	1	2	0
Arizona	1	0	0	3	6	12	14	0	1	4	0	0	2	7	2	1
Arkansas	0	0	1	0	1	9	5	1	0	1	2	1	0	3	1	4
California	13	9	7	7	20	75	215	56	63	44	48	58	49	66	43	46
Colorado	1	3	0	0	0	1	2	0	1	1	2	1	2	2	4	9
Connecticut	2	1	1	2	1	1	4	11	8	17	12	19	11	10	12	13
Delaware	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
District of Columbia	0	0	0	1	0	0	0	0	2	0	1	0	0	0	0	----
Florida	5	0	1	3	1	3	4	0	2	0	2	1	4	1	1	1
Georgia	1	2	0	0	1	1	6	1	0	1	0	3	0	0	0	0
Idaho	0	1	0	0	0	0	0	0	0	0	0	----	0	0	0	1
Illinois	2	5	5	4	5	5	26	6	7	16	24	25	35	36	42	50
Indiana	1	0	0	0	0	1	1	2	3	2	4	7	6	4	0	18
Iowa	2	1	0	0	1	0	1	0	1	3	----	3	7	5	5	6
Kansas	3	4	5	2	1	5	15	4	4	10	3	9	9	10	19	19
Louisiana	1	1	1	2	7	10	20	3	1	2	2	1	0	1	1	3
Maine	1	1	1	0	0	1	0	0	0	1	7	6	6	10	15	5
Maryland	0	1	0	0	0	1	1	0	0	1	0	0	0	0	2	3
Massachusetts	6	2	3	4	7	11	23	10	28	38	55	60	92	106	97	79
Michigan	8	1	4	0	0	3	7	3	2	9	10	15	19	18	24	21
Minnesota	1	2	1	0	3	2	7	1	1	1	3	9	2	11	8	15
Mississippi	1	0	4	3	4	6	2	0	1	1	2	1	1	0	0	0
Missouri	2	3	1	4	2	0	4	15	8	2	6	6	16	17	23	20
Montana	0	1	0	0	0	0	3	1	0	0	0	0	0	0	0	0
Nebraska	1	0	1	0	1	1	0	0	1	1	4	3	5	4	8	7
New Hampshire	1	1	0	0	0	0	1	----	----	----	----	----	----	----	----	----
New Jersey	1	2	1	2	2	7	12	17	13	22	20	23	34	39	37	38
New Mexico	1	1	6	0	1	3	59	9	9	8	6	5	3	11	19	9
New York	15	6	4	12	8	10	38	25	46	68	58	85	71	92	55	20
North Carolina	2	3	1	0	0	0	1	0	1	0	0	3	0	2	0	1
North Dakota	1	0	9	4	3	1	1	0	0	0	2	2	3	1	3	----
Ohio	6	7	2	1	0	2	32	(1)	(1)	65	128	73	85	80	96	87
Oklahoma	3	2	1	1	1	4	16	8	11	8	12	6	10	10	10	7
Oregon	0	0	0	2	0	0	2	2	1	12	3	7	11	21	21	30
Pennsylvania	4	1	3	1	2	2	8	5	4	7	8	49	41	48	42	35
Rhode Island	1	0	1	1	1	1	0	0	0	1	4	2	3	4	4	1
South Carolina	11	10	3	6	7	7	8	2	2	1	0	2	6	2	4	2
South Dakota	2	1	1	2	0	0	0	0	0	0	0	0	0	5	2	7
Tennessee	1	2	1	0	0	5	7	1	5	1	4	0	5	2	4	3
Texas	0	0	0	0	1	0	20	10	19	15	12	28	20	16	25	12
Utah	0	0	0	0	0	0	4	1	0	1	0	1	0	6	4	2
Vermont	0	0	0	0	0	0	2	0	0	0	0	0	1	0	1	2
Virginia	1	6	3	1	4	6	1	2	0	0	1	0	0	0	1	0
Washington	1	1	3	2	1	1	1	0	0	1	3	7	7	15	11	16
West Virginia	0	0	1	0	0	2	2	0	0	8	11	16	17	13	18	22
Wisconsin	3	3	3	2	4	3	5	2	2	7	2	4	10	15	14	19
Wyoming	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1
Total	107	85	76	74	96	207	583	199	248	362	463	542	593	713	661	635

[1] No weekly report received; 271 cases reported for month of August.

COURT DECISIONS RELATING TO PUBLIC HEALTH

Keeping of swine in town enjoined.—(Massachusetts Supreme Judicial Court; Town of Lexington *v.* Miskell, 157 N. E. 598; decided July 5, 1927.) The board of selectmen of the town of Lexington, acting as a board of health, adopted regulations governing the keeping of swine. The defendant kept from 400 to 600 swine on his premises within the town without obtaining a permit as required by the regulations. The board of health determined that the keeping of swine by the defendant was a menace and harmful to the inhabitants of the town, and issued an order prohibiting the defendant from keeping swine on his premises. The order was not complied with and the town brought a suit to enjoin the defendant from continuing to exercise the trade or employment of keeping swine in the town. The decree of the lower court enjoined the defendant from keeping swine in the town in violation of the regulations of the board of health, and this decree was affirmed by the supreme court.

Conviction for violation of smallpox quarantine affirmed.—(Washington Supreme Court; City of Seattle *v.* Cottin, 258 P. 520; decided August 9, 1927.) An ordinance of the city of Seattle provided in part as follows:

SEC. 8. It shall be unlawful for any person to visit a person sick with * * * smallpox * * * and afterwards appear upon the streets, alleys, or other public places in the city of Seattle, or go into any house, building, or other place in said city where they would be likely to aid in spreading said disease until they shall procure from the health officer of the city of Seattle a certificate that they are free from danger of communicating the disease to which they have been exposed: *Provided, however,* That this section shall not apply to physicians, quarantine inspectors, or the health officer when in the exercise of their duties as such physician or officers.

SEC. 14. It shall be unlawful for any person to violate or refuse to obey any lawful order or regulation of the board of health, the health officer, or any quarantine officer made within the powers conferred by the charter or ordinances of the city of Seattle upon the officer making such order, or to in any manner obstruct or interfere with the board of health, health officer, or any appointee of the board of health in the performance of duties imposed by the charter or ordinances of the city of Seattle.

A regulation of the State board of health relating to smallpox provided as follows:

(*e*) Persons not living on the premises who are susceptible (not vaccinated nor having had previous infection), and who have been exposed, shall be isolated or kept under the observation of the health officer or physician for a period of 18 days. Exposed immunized persons are exempt from isolation if successfully vaccinated within seven years or if they have had the disease. Submission to vaccination exempts the individual from isolation.

The defendant, a drugless healer having a certificate to practice mechanotherapy, visited, in his professional capacity, a person in Seattle infected with smallpox. The chief quarantine officer of the

city requested the defendant to submit to vaccination or go into quarantine. The defendant at first agreed to go into quarantine, but afterwards refused to remain in quarantine and left the city for about 18 days. In a prosecution for an alleged violation of the city ordinance it was admitted that at the time of being exposed to smallpox the defendant had not been vaccinated for a period of 15 or 20 years and had had no previous infection from smallpox. The defendant contended that he was entitled to be included within the class known as physicians and within the exception under section 8 of the ordinance. In affirming the conviction of the defendant, the supreme court declared that it was unnecessary to pass on the defendant's contention and disposed of the case in the following language:

In so far as the ordinance of Seattle exempts physicians of any kind or school, it must yield to the superior authority of the State board of health which has adopted the rule (subdivision [e], section 25) above quoted. Under those provisions no one is exempted except exposed immunized persons, those who have been successfully vaccinated within seven years, or those who submit to vaccination—under none of which classes can appellant claim exemption.

We consider further discussion of the questions raised in this case unnecessary.

PUBLIC HEALTH ENGINEERING ABSTRACTS

The water supplies of Quebec Province. T. J. Lafreniere. *Canadian Engineer*, vol. 52, No. 10, March 8, 1927, pp. 97 and 100–101. (Abstract by R. E. Thompson.)

Data are given on the water supplies in the Province of Quebec. There are 550 water-supply systems, serving a population of 1,400,000. As there is no underground water supply in the Province, except very small springs, most of the supplies have their source in rivers, all of which are polluted. There are 46 municipalities, having an aggregate population of 850,000, which are supplied with filtered water from 31 plants, and there are 19 chlorinating plants supplying 25 municipalities, with a population of 150,000. There are, however, 300 small villages using river water that is polluted. Largely as a result of water purification, the typhoid death rate in the Province has been reduced from 26 per 100,000 prior to 1916 to 8.9 in 1925, but it is still too high. In Montreal, where the filtration plants are operated under technical supervision, the rate in 1926 was 5 per 100,000. Every plant in the Province is visited by a representative of the provincial bureau of health from three to six times each year, and a system has been devised whereby plants can send daily samples for examination. At the present time 34 municipalities are availing themselves of this system. It has been found that many small-plant operators are not sufficiently interested to maintain chlorinating equipment in proper repair, and in some cases even to operate it continuously, and it is suggested that filter operators be required to pass a test and secure a certificate of proficiency which could be withdrawn if plant or equipment should be neglected.

Résumé of progress in chlorination. Norman J. Howard. *Canadian Engineer*, vol. 52, No. 10, March 8, 1927, pp. 116–118. (Abstract by R. E. Thompson.)

The early history of chlorination is reviewed briefly, and recent developments are discussed in some detail with special reference to Toronto. The employment of prechlorination is extending. In Toronto the cost of operation of the

drifting sand plant has been reduced by $150,000 over a period of four years by applying chlorine to the raw water instead of alum at such times as the water is physically good. With moderately turbid water considerable economy can be effected by applying small doses of chlorine and reducing the alum to an amount just sufficient for clarification. The observation that chlorination aids coagulation has been confirmed at Toronto. Other advantages of prechlorination are the reduction of filter load in heavily polluted water, increased rates of filtration, and an additional safeguard in the treatment of water subject to rapid changes in quality. Chlorine is being increasingly employed for destruction and prevention of algal growths in filter underdrains and sedimentation basins. Applications of excess chlorine and, subsequently, copper sulfate were ineffective for reducing the loss of head which rapidly increases in slow sand filters at Toronto during a two-month period each spring. The recently inaugurated super-sand dechlorination treatment for prevention of taste at Toronto is outlined and discussed.

Treatment of water in coagulating basin and handling of basin. George D. Norcom. *Journal North Carolina Section American Water Works Association*, vol. 4, No. 1, 1926, pp. 112-122. (Abstract by J. K. Hoskins.)

This article comprises a round-table discussion of the subject of coagulating basins. The following topics are treated: Need for cleaning is generally indicated by the passage of large amounts of dead floc causing short filter runs as well as decreased coagulation efficiency resulting in higher bacterial counts of the effluent; hopper-bottomed basins afford easy cleaning—squeegees may be used in flat basins if they are not too deep; diffusion walls are most effective when no openings are provided near the bottom to allow sweeping up of the bottom floc; larger holes are more efficient than small ones, though care must be taken to prevent short circuiting; milky water from the coagulating basin can be relieved by using a larger amount of alum; change in brand of alum has been observed to result in efficiency of coagulation with certain waters.

Efficiency of coagulation can be increased by close observation of the pH of the water. For North Carolina the optimum pH ranges from 4.5 in the eastern to 5.6 in the central and 6.2 to 6.4 in the western part of the State. Sudden changes, lasting usually for short periods, have required considerable adjustment of the normal optimum pH value at various plants.

Deforestation: Its result and the remedy. Warren E. Hall. *Journal North Carolina Section American Water Works Association*, vol. 4, No. 1, 1926, pp. 26–37. (Abstract by J. K. Hoskins.)

The author contends that deforestation is largely responsible for floods, high turbidity of streams, silting of reservoirs, and lower minimum stream flows, resulting in increased costs of surface water storage. The remedy is reforestation. An address of Governor McLean advocating the inauguration of a comprehensive program of stream gauging throughout the State is appended.

Sodium aluminate and its application to North Carolina waters. H. A. Lilly. *Journal North Carolina Section American Water Works Association*, vol. 4, No. 1, 1926, pp. 141–144. (Abstract by J. K. Hoskins.)

The composition and reactions of sodium aluminate are explained in this paper and the advantages of its use enumerated, such as low CO_2 content of the treated water, with consequent reduction of corrosion, reduced sulphate hardness, and increased coagulating value over alum.

Water supply in the Borough of Chichester. Anon. *Surveyor*, vol. 71, June 3, 1927, pp. 547–548. (Abstract by J. K. Hoskins.)

A brief description, illustrated, of the improved water works of Chichester is given in this article. The plant consists of a new 12-inch pumping and supply main, triple ram pump, 140-horsepower gas engine, and 2 m. g. reinforced concrete, covered reservoir, 160 feet square, divided into two compartments.

Water supply and purification. Report of committee on water supply and purification presented to public health engineering section of the A. P. H. A., 55th annual meeting, October, 1926. *American Journal of Public Health,* vol. 17, No. 7, July, 1927, pp. 683–687. (Abstract by H. B. Hommon.)

The report of the committee contains brief discussions on: (1) Typhoid fever increase in 1925; (2) constructive efforts to control stream pollution; (3) improvements in water purification practices; (4) iodine treatment of water; (5) outstanding recent construction; and (6) a proposed filtration-plant census in 1927.

Studies of double coagulation at Cincinnati, Ohio. C. Bahlman and E. B. Evans. *Engineering News-Record,* vol. 98, No. 25, June 23, 1927, p. 1028. (Abstract by A. S. Bedell.)

The system for purifying the Ohio River water at Cincinnati is preliminary sedimentation for 72 hours; coagulation with lime and iron sulphate, followed by five to eight hours of sedimentation; mechanical filtration at the rate of 125 m. g. d.; chlorination. During double coagulation experiments, alum, which gave better results than iron sulphate at equal cost, was added at the rate of 0.76 grain per gallon to primary settling tanks, and this reduced the dosage of secondary coagulant 30 per cent. Average cost of chemicals increased from $2.38 with single coagulation to $3.24 with double coagulation. Filter service increased 31 per cent with a saving of 18 per cent in wash water. *B. coli* in filter effluent was reduced from 8.30 per 100 c. c. to 1.54 per 100 c. c., while chlorinated water shows reduction from 0.70 per 100 c. c. to 0.12 per 100 c. c. The author believes that for plants using alum as coagulant, the splitting of this into primary and secondary application should entail no additional expense and should result in many benefits. A table is given of the summarized comparison of single and double coagulation.

New 12-m. g. d. water-purification plant for Oakland. Anon. *Engineering News-Record,* vol. 98, No. 21, May 26, 1927, pp. 857–860. (Abstract by A. S. Bedell.)

Special features of the additional 12 m. g. d. water purification plant for Oakland, Calif., are the 105-nozzle aerator, mechanical alum mixers, flexibility in operating basins, large filter units, single filter operating stand, and reclamation of wash water. Mixing is by variable speed motor-operated, stirring mechanisms in four cylindrical tanks 21 feet in diameter and 21 feet deep. Filters operate under 8 to 15 feet head at rate of 110 m. g. d. Air agitation preliminary to water wash of filters is provided largely because of sticky hydrate formed by manganese in raw water. Filters have perforated red brass tube underdrains. Most of the valves are hydraulically operated. Water will be prechlorinated as well as receive final chlorination. The article is well illustrated.

Results of using sodium aluminate with alum in filtration work. Sheppard T. Powell. *Engineering News-Record,* vol. 98, No. 21, May 26, 1927, pp. 871–872. (Abstract by A. S. Bedell.)

Tests have shown that the alum-aluminate process has marked advantage over straight alum treatment with many waters, especially with soft, highly colored waters.

The following comparison of results is made in treating a highly colored soft water:

	Alum	Alum plus 0.25 gr. sodium aluminate
Grains per gallon	3. 2	1. 6
CO_2	16. 0	5. 0
pH	6. 0	7. 1
Residual alumina	0. 4	0. 0

Aeration in water purification. W. S. Mahlie. *Water Works,* vol. 66, No. 8, August, 1927, pp. 320–331. (Abstract by W. R. Schreiner.)

A résumé of aeration practice and results as found in the technical literature, together with some experimental data on bacterial removal. At Fort Worth, Tex., 127 daily tests from August, 1922, to January, 1923, showed 35.6 per cent reduction in 37° C. agar counts. Sunlight regarded as most important factor in this reduction.

The decolorization of soft waters. Robert Spurr Weston. *Water Works*, vol. 66 No. 8, August, 1927, pp. 308–311. (Abstract by W. R. Schreiner.)

Various methods of declorizing and their effects are discussed. Storage is effective, but new reservoirs require 6 to 10 years to become stabilized and most effective in color reduction. Lakes having large storage ratios (according to the formula: Storage ratio equals the capacity divided by mean annual run-off) may effect a practically complete color removal. Silver Lake, Mass., storage ratio over 4, receives water from 100 to 196 p. p. m. color, yields water of 9 p. p. m. average. Color reduction for iron-bearing waters is materially increased where at least one semiannual overturn is included in the storage period. Slow sand filtration rarely removes more than 25 per cent unless the method of Clark is used, in which the filters are charged with aluminum hydrate. This method deserves more attention.

For more complete color reduction, coagulation is recommended, with control of pH values, with or without prechlorination, aeration, and storage, as each situation and condition may require. Data are given covering range in chemical dosage, methods, and rates of mixing. Slow stirring is advised. Coagulating basins need frequent sludge removal to prevent resolution of color. No economical methods have been developed for decolorizing waters containing large amounts of sulphite pulp wastes or tarry or saccharine coloring matter. For such waters it is suggested that some sort of biological process is required preliminary to coagulation.

New ideas in filter plant-construction. John L. Porter. *Water Works*, vol. 66, No. 8, August, 1927, pp. 311–313. (Abstract by W. R. Schreiner.)

General description of old plant, softening, coagulating, filtering, and chlorinating 40 m. g. d. of Mississippi River water. Detailed description of new 72 m. g. d. extension begun in 1924. Alluvial soil of New Orleans territory requires careful construction to prevent both vertical and lateral movements of structures. New coagulating basin with baffle two-thirds of length toward outgoing end; chemicals handled by bucket elevators and screw conveyors; chemical dosage to be regulated by Venturi meter and proportional flow diaphragm-controlled apparatus designed by Earl; new baffles to be of wood, because of continual settling of all structures; wash-water pumps in place of elevated tanks; new type of filter underdrain designed by Delery, requiring less headroom and less cost and giving much more uniform wash-water distribution. Attempts to develop a cheap local bank sand by repeated washing showed that a more expensive sand of correct characteristics gave more economical operating conditions. Two new pumps designed by Wood, motor-driven centrifugal type, 30 m. g. d. at 100 pounds pressure or 40 m. g. d. at 75 pounds pressure, to assist original installation of steam-driven pumps.

Iron removal at Champaign, Ill. Frank C. Amsbury, jr. *Water Works*, vol. 66, No. 8, August, 1927, p. 330. (Abstract by W. R. Schreiner.)

The article reports the experiences of the Champaign and Urbana Water Co. with iron removal, beginning in 1911. Aeration followed by filtration failed, because of excessive matting of crenothrix in filter beds. Water jets failed to tear up the growths; steam jets killed the growths but caused complaints of bad tastes and odors. Finally, prechlorination was tried, ending all crenothrix troubles. In 1924 two new filters with newest proved ideas in specifications were built, but it was found necessary to put in air wash to prevent the packing of the beds.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended October 1, 1927

DIPHTHERIA	Cases
Alabama	77
Arizona	1
Arkansas	9
California	88
Colorado	34
Connecticut	19
Delaware	2
Florida	6
Georgia	48
Idaho	1
Illinois	100
Indiana	29
Iowa [1]	11
Kansas	51
Louisiana	37
Maine	3
Maryland [1]	29
Massachusetts	71
Michigan	79
Minnesota	39
Mississippi	39
Missouri	40
Montana	5
Nebraska	9
New Jersey	106
New Mexico	2
New York [2]	47
North Carolina	176
Oklahoma [3]	63
Oregon	6
Pennsylvania	124
Rhode Island	5
South Carolina	72
Tennessee	26
Texas	44
Utah [1]	9
Vermont	2
Washington	18
West Virginia	19
Wisconsin	26
Wyoming	2

INFLUENZA	Cases
Alabama	7
Arkansas	43
California	12
Connecticut	1
Delaware	1
Florida	2
Georgia	33
Illinois	7
Indiana	3
Kansas	1
Louisiana	13
Maryland [1]	2
Massachusetts	6
Michigan	2
New Jersey	2
Oklahoma [3]	6
Oregon	25
South Carolina	216
Tennessee	6
Texas	30
Utah [1]	3
Wisconsin	36

MEASLES	
Alabama	11
Arizona	1
Arkansas	6
California	25
Colorado	4
Connecticut	9
Delaware	1
Florida	1
Georgia	8
Illinois	18
Indiana	7
Iowa [1]	3
Kansas	24
Louisiana	10
Maine	9
Maryland [1]	9
Massachusetts	41

[1] Week ended Friday. [2] Exclusive of New York City. [3] Exclusive of Oklahoma City and Tulsa.

MEASLES—continued	Cases
Michigan	17
Minnesota	4
Missouri	3
Montana	2
Nebraska	1
New Jersey	8
New Mexico	14
New York [2]	50
North Carolina	106
Oklahoma [3]	13
Oregon	2
Pennsylvania	96
South Carolina	97
Tennessee	26
Texas	2
Utah [1]	1
Washington	19
West Virginia	6
Wisconsin	62
Wyoming	2

MENINGOCOCCUS MENINGITIS

Arkansas	1
California	1
Colorado	1
Connecticut	3
Florida	2
Illinois	10
Iowa [1]	1
Kansas	1
Louisiana	1
Maryland [1]	1
Michigan	2
Minnesota	2
Mississippi	1
Missouri	1
Montana	1
New Jersey	1
New York [2]	2
North Carolina	2
Oklahoma [3]	1
Oregon	4
Pennsylvania	2
Rhode Island	1
Texas	1
Washington	4
Wisconsin	2

POLIOMYELITIS

	Cases
Arizona	1
Arkansas	4
California	46
Colorado	9
Connecticut	13
Florida	1
Idaho	1
Illinois	50
Indiana	18
Iowa [1]	6
Kansas	19
Louisiana	3
Maine	5
Maryland [1]	3
Massachusetts	79
Michigan	21
Minnesota	15
Missouri	20
Nebraska	7
New Jersey	38
New Mexico	9
New York [2]	20
North Carolina	1
Ohio	87
Oklahoma [3]	7
Oregon	30
Pennsylvania	35
Rhode Island	1
South Carolina	2
South Dakota	7
Tennessee	3
Texas	12
Utah [1]	2
Vermont	2
Washington	16
West Virginia	22
Wisconsin	19
Wyoming	1

SCARLET FEVER

Alabama	25
Arizona	1
Arkansas	7
California	73
Colorado	31
Connecticut	22
Florida	7
Georgia	29
Idaho	4
Illinois	120
Indiana	53
Iowa [1]	20
Kansas	64
Louisiana	7
Maine	16
Maryland [1]	16
Massachusetts	129
Michigan	100
Minnesota	61
Mississippi	29
Missouri	41
Montana	9
Nebraska	23
New Jersey	51
New Mexico	4
New York [2]	89
North Carolina	76
Oklahoma [3]	21
Oregon	25
Pennsylvania	149
Rhode Island	10
South Carolina	26
South Dakota	18
Tennessee	35
Texas	19
Utah [1]	2
Vermont	6
Washington	17
West Virginia	50
Wisconsin	41
Wyoming	9

[1] Week ended Friday. [2] Exclusive of New York City. [3] Exclusive of Oklahoma City and Tulsa.

SMALLPOX

	Cases
California	8
Colorado	1
Florida	1
Illinois	5
Indiana	5
Iowa [1]	5
Kansas	2
Louisiana	9
Michigan	7
Minnesota	1
Mississippi	1
Missouri	5
Montana	6
New Jersey	4
New Mexico	2
New York [2]	6
North Carolina	9
Oklahoma [3]	6
Oregon	24
South Carolina	2
Texas	4
Utah [1]	6
Washington	12
West Virginia	8
Wisconsin	7

TYPHOID FEVER

	Cases
Alabama	36
Arkansas	15
California	16
Colorado	9
Connecticut	5
Florida	3

TYPHOID FEVER—continued

	Cases
Georgia	27
Idaho	1
Illinois	49
Indiana	21
Iowa [1]	5
Kansas	28
Louisiana	13
Maine	6
Maryland [1]	24
Massachusetts	19
Michigan	15
Minnesota	9
Mississippi	9
Missouri	9
Montana	6
Nebraska	1
New Jersey	10
New Mexico	15
New York [2]	26
North Carolina	60
Oklahoma [3]	85
Oregon	5
Pennsylvania	65
Rhode Island	2
South Carolina	69
South Dakota	3
Tennessee	59
Texas	22
Utah [1]	4
Washington	16
West Virginia	31
Wisconsin	17

Reports for Week Ended September 24, 1927

DIPHTHERIA

	Cases
District of Columbia	10
Massachusetts	74
North Dakota	12

INFLUENZA

	Cases
Massachusetts	4
North Dakota	2

MEASLES

	Cases
District of Columbia	2
Massachusetts	25
North Dakota	4

POLIOMYELITIS

	Cases
Massachusetts	97
North Dakota	3
Ohio	96

SCARLET FEVER

	Cases
District of Columbia	8
Massachusetts	130
North Dakota	22

TYPHOID FEVER

	Cases
District of Columbia	2
Massachusetts	19
North Dakota	2

[1] Week ended Friday.
[2] Exclusive of New York City.
[3] Exclusive of Oklahoma City and Tulsa.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
August, 1927										
Alabama	7	105	48	737	138	64	4	71	10	356
Idaho	2	7			17		1	16	25	4
Illinois	22	325	42	25	128	2	66	314	31	223
Indiana	0	74	37		24		11	104	94	70
Maine	0	31			13		10	56	0	30
Maryland	2	108	21	3	40		1	46	0	209
Mississippi		105	881	15,090	471	1,813	8	47	7	280
Missouri	6	87	6	15	38		36	93	22	104
Montana	3	21	1		10	1	0	159	1	44
New York	17	680		23	380		237	382	11	188
North Carolina	3	232			705		3	108	34	313
Oklahoma [1]	4	79	34	743	114	65	36	29	48	410
Oregon	15	23	22	6	45		31	28	37	21
Pennsylvania	6	447			247	3	70	343	1	214
Rhode Island	0	34		1	5		8	37	0	19
South Dakota	0	13			26		7	28	31	7
Tennessee	4	69	21	679	49	122	13	71	25	633
Virginia	4	134	692	215	48	47	7	91	16	301
Washington	9	71	16		154		10	55	25	35
Wisconsin	23	80	42		293		18	199	35	40

[1] Exclusive of Oklahoma City and Tulsa.

August, 1927

	Cases
Anthrax:	
Maine	1
Missouri	1
Chicken pox:	
Alabama	7
Idaho	7
Illinois	188
Indiana	15
Maine	16
Maryland	18
Mississippi	310
Missouri	10
Montana	9
New York	322
North Carolina	30
Oklahoma [1]	8
Oregon	26
Pennsylvania	210
Rhode Island	4
South Dakota	3
Tennessee	6
Virginia	43
Washington	77
Wisconsin	78
Dengue:	
Alabama	3
Mississippi	44
Dysentery:	
Illinois	52
Maryland	46
Mississippi (amebic)	48
Mississippi (bacillary)	863
New York	10
Oklahoma [1]	56

August, 1927—Continued

	Cases
Dysentery—Continued	
Oregon	1
Tennessee	20
Virginia	532
German measles:	
Illinois	4
Maine	3
Maryland	3
New York	60
North Carolina	26
Pennsylvania	20
Rhode Island	1
Washington	22
Hookworm disease:	
Mississippi	326
Oklahoma [1]	1
Virginia	26
Impetigo contagiosa:	
Maryland	5
Oregon	12
Pennsylvania	7
Lead poisoning:	
Illinois	15
Leprosy:	
Wisconsin	1
Lethargic encephalitis:	
Alabama	1
Illinois	9
Maryland	1
Montana	1
New York	18
Pennsylvania	3
Washington	2
Wisconsin	1

[1] Exclusive of Oklahoma City and Tulsa.

August, 1927—Continued

Disease and State	Cases
Mumps:	
Alabama	25
Idaho	26
Illinois	212
Indiana	9
Maine	17
Maryland	17
Mississippi	165
Missouri	47
Montana	1
New York	389
Oklahoma [1]	8
Oregon	18
Pennsylvania	203
Rhode Island	9
South Dakota	4
Tennessee	14
Washington	50
Wisconsin	104
Ophthalmia neonatorum:	
Illinois	64
Maryland	2
Mississippi	15
Missouri	1
New York	1
North Carolina	1
Oklahoma [1]	1
Pennsylvania	5
Rhode Island	2
Paratyphoid fever:	
Illinois	4
Maine	1
New York	5
Oregon	1
Tennessee	2
Puerperal fever:	
Illinois	2
Mississippi	47
New York	6
Pennsylvania	2
Rabies in animals:	
Maryland	5
Mississippi	12
Missouri	2
New York	9
Oregon	1
Wisconsin	2
Rabies in man:	
Illinois	1
Maryland	1
Pennsylvania	1
Tennessee	7
Wisconsin	1
Rocky Mountain spotted or tick fever:	
Montana	1
Scabies:	
Oregon	1
Pennsylvania	2
Septic sore throat:	
Idaho	6
Illinois	3

[1] Exclusive of Oklahoma City and Tulsa.

August, 1927—Continued

Disease and State	Cases
Septic sore throat—Continued	
Maryland	8
Missouri	5
Montana	3
New York	5
North Carolina	2
Oregon	6
Rhode Island	3
Tennessee	2
Tetanus:	
Illinois	7
Maine	1
Maryland	3
Montana	1
New York	12
Oklahoma [1]	5
Oregon	1
Pennsylvania	7
Trachoma:	
Illinois	2
Mississippi	9
Missouri	38
New York	1
North Carolina	1
Oklahoma [1]	8
Pennsylvania	2
Rhode Island	1
South Dakota	5
Wisconsin	1
Trichinosis:	
Montana	1
Tularaemia:	
Idaho	2
Typhus fever:	
Alabama	7
Vincent's angina:	
Illinois	1
Maine	6
Maryland	12
New York	64
Whooping cough:	
Alabama	114
Idaho	56
Illinois	1,218
Indiana	121
Maine	48
Maryland	218
Mississippi	870
Missouri	183
Montana	20
New York	1,210
North Carolina	915
Oklahoma [1]	34
Oregon	48
Pennsylvania	730
Rhode Island	21
South Dakota	58
Tennessee	69
Virginia	558
Washington	126
Wisconsin	450

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 97 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,050,000. The estimated population of the 91 cities reporting deaths is more than 29,250,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended September 17, 1927, and September 18, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
43 States	1,393	1,186	
97 cities	579	469	608
Measles:			
42 States	627	762	
97 cities	114	159	
Poliomyelitis:			
43 States	623	123	
Scarlet fever:			
43 States	1,286	1,190	
97 cities	400	365	359
Smallpox:			
43 States	220	98	
97 cities	30	13	14
Typhoid fever:			
43 States	1,084	1,591	
97 cities	194	307	222
Deaths reported			
Influenza and pneumonia:			
91 cities	355	311	
Smallpox:			
91 cities	0	0	

City reports for week ended September 17, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during non-epidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	0	0	0	0	0	0	0	1
New Hampshire:									
Concord	22,546	0	0	0	0	0	1	0	0
Manchester	83,097	0	3	0	0	0	0	0	1
Vermont:									
Barre	10,008	0	0	0	0	0	0	0	0
Burlington	24,089	0	1	0	0	0	0	0	1

City reports for week ended September 17, 1927—**Continued**

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND—con.									
Massachusetts:									
Boston	779,620	3	28	15	2	0	11	6	9
Fall River	123,993	0	2	1	1	0	0	1	0
Springfield	142,065	1	2	1	0	0	1	1	0
Worcester	190,757	0	4	0	0	0	0	2	1
Rhode Island:									
Pawtucket	69,760	0	0	0	0	0	0	0	0
Providence	267,918	0	3	2	0	0	0	0	0
Connecticut:									
Bridgeport	(1)	0	5	2	0	0	0	0	1
Hartford	160,197	0	4	1	1	0	0	2	3
New Haven	178,927	0	2	1	0	0	0	5	2
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	5	13	12		0	4	8	7
New York	5,873,356	20	85	107	3	5	9	0	50
Rochester	316,786	0	4	6		0	0	1	1
Syracuse	182,003	3	4	0		0	0	0	2
New Jersey:									
Camden	128,642	0	2	8	0	0	0	0	2
Newark	452,513	3	6	11	1	1	0	5	8
Trenton	132,020	0	3	1	1	0	0	1	4
Pennsylvania:									
Philadelphia	1,979,364	18	37	41		1	0	13	26
Pittsburgh	631,563	7	15	26		2	14	9	10
Reading	112,707	0	2	2		0	1	0	2
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	2	8	5	0	0	2	0	2
Cleveland	936,485	5	24	38	2	0	5	21	7
Columbus	279,836	1	4	2	0	1	0	0	1
Toledo	287,380	2	9	5	2	2	1	0	4
Indiana:									
Fort Wayne	97,846	0	2	1	0	0	0	0	0
Indianapolis	358,819	4	6	2	0	0	0	5	15
South Bend	80,091	0	1	0	0	0	2	0	1
Terre Haute	71,071	0	0	1	0	0	0	0	3
Illinois:									
Chicago	2,995,239	37	55	38	[illegible]	0	7	11	27
Springfield	63,923	0	1	0	0	0	1	1	0
Michigan:									
Detroit	1,245,824	19	44	27	0	2	2	14	10
Flint	130,316	0	6	1	0	0	0	1	2
Grand Rapids	153,698	2	3	0	0	0	1	0	3
Wisconsin:									
Kenosha	50,891	1	1	0	0	0	0	3	0
Madison	46,385	2	1	1	0	0	1	0	0
Milwaukee	509,192	10	9	5	0	0	6	7	4
Racine	67,707	2	1	3	0	0	1	0	1
Superior	39,671	0	1	0	0	0	0	0	3
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	0	1	0	0	0	0	0	0
Minneapolis	425,435	10	19	17	0	0	3	2	3
St. Paul	246,001	1	13	3	0	2	1	6	3
Iowa:									
Davenport	52,469	0	0	0	0		0	0	
Sioux City	76,411		1						
Waterloo	36,771	0	0	1	0		1	0	
Missouri:									
Kansas City	367,481	0	4	4	0	0	2	2	7
St. Joseph	78,342	0	1	0	0	0	1	0	4
St. Louis	821,543	1	23	22	0	0	2	3	
North Dakota:									
Fargo	26,403	0	1	0	0	0	0	1	1
Grand Forks	14,811	0	1	0	0		0	0	

[1] No estimate made.

City reports for week ended September 17, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
WEST NORTH CENTRAL—continued									
South Dakota:									
Aberdeen	15,036	0	0	0	0		1	0	
Sioux Falls	30,127	0	0	0	0		0	0	
Nebraska:									
Lincoln	60,941	2	1	0	0	0	1	2	0
Omaha	211,768	2	12	3	0	0	0	1	4
Kansas:									
Topeka	55,411	1	1	11	0	0	3	0	0
Wichita	88,367	0	2	2	0	0	0	1	0
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	0	1	1	0	0	0	0	2
Maryland:									
Baltimore	796,296	8	17	19	0	1	1	4	15
Cumberland	33,741	1	1	0	0	0	0	0	0
Frederick	12,035	0	0	0	0	0	0	0	0
District of Columbia:									
Washington	497,906	0	6	15	0	0	1	0	6
Virginia:									
Lynchburg	30,395	0	1	1	0	0	0	0	0
Norfolk	(1)	0	2	0	0	0	0	0	3
Richmond	186,403	0	13	1	0	2	1	0	0
Roanoke	58,208	0	4	2	0	0	0	0	0
West Virginia:									
Charleston	49,019	0	2	0	0	1	0	0	0
Wheeling	56,208	3	1	1	0	0	1	1	1
North Carolina:									
Raleigh	30,371	0	3	0	0	0	0	0	2
Wilmington	37,061	0	2	0	0	0	0	0	1
Winston-Salem	69,031	1	2	4	0	0	2	30	0
South Carolina:									
Charleston	73,125	0	1	2	13	0	0	0	1
Columbia	41,225	0	1	2	0		1	0	1
Greenville	27,311	0	2	0	0	0	0	0	0
Georgia:									
Atlanta	(1)	0	6	11	8	1	0	1	7
Brunswick	16,809		0						
Savannah	93,134	0	1	2	1	0	1	0	3
Florida:									
Miami	69,754	0		1	0	0	0	0	1
St. Petersburg	26,847		0			0			0
Tampa	94,743	0	0	1	0	0	0	0	1
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309		0						
Lexington	46,895	0		0	0	0	1	0	1
Louisville	305,935	0	5	3	1	0	1	1	8
Tennessee:									
Memphis	174,533	0	4	1	0	0	0	0	6
Nashville	136,220	3	3	4	0	0	1	0	3
Alabama:									
Birmingham	205,670	2	5	11	2	0	0	0	1
Mobile	65,955	0	1	1	0	0	0	0	0
Montgomery	46,481	1	2	3	0	0	0	1	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	0	0	0	0		0	0	
Little Rock	74,216	0	1	0	0	0	2	0	0
Louisiana:									
New Orleans	414,493	0	6	6	2	1	0	0	6
Shreveport	57,857	1	1	2	0	0	0	0	1
Oklahoma:									
Oklahoma City	(1)	0	2	3	0	0	0	0	1
Texas:									
Dallas	194,450	0	4	14	1		2	0	
Galveston	48,375	0	0	1	0	0	0	0	2
Houston	164,954	0	2	2	0	0	0	0	2
San Antonio	198,069	0	1	8	0	1	0	0	3

[1] No estimate made.

City reports for week ended September 17, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria: Cases, estimated expectancy	Diphtheria: Cases reported	Influenza: Cases reported	Influenza: Deaths reported	Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
MOUNTAIN									
Montana:									
Billings	17,971	1	0	0	0	0	0	0	0
Great Falls	29,883	0	0	0	0	0	1	0	0
Helena	12,037	0	0	0	0	0	1	0	1
Missoula	12,668	0	0	0	0	0	0	0	0
Idaho:									
Boise	23,042	0	0	0	0	0	0	2	0
Colorado:									
Denver	280,911	1	12	21		1	2	1	5
Pueblo	43,787	0	3	0	0	0	1	0	1
New Mexico:									
Albuquerque	21,000	0	0	0	0	0	0	0	0
Utah:									
Salt Lake City	130,948	10	3	4	0	0	0	1	4
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	(1)	2	4	6	0		5	3	
Spokane	108,897	3	2	0	0		0	0	
Tacoma	104,455	0	3	3	0	0	0	0	3
Oregon:									
Portland	282,383	1	5	2	0	0	1	0	3
California:									
Los Angeles	(1)		27						
Sacramento	72,260	1	2	0	0	0	0	0	0
San Francisco	557,530	33	14	4	1	1	9	6	5

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
NEW ENGLAND											
Maine:											
Portland	1	0	0	0	0	0	1	1	0	1	16
New Hampshire:											
Concord	0	0	0	0	0	0	0	0	0	0	3
Manchester	0	0	0	0	0	1	0	0	0	0	15
Vermont:											
Barre	0	1	0	0	0	1	0	0	0	1	1
Burlington	0	0	0	0	0	0	0	0	0	0	6
Massachusetts:											
Boston	16	25	0	0	0	10	4	8	0	22	175
Fall River	1	1	0	0	0	2	2	3	0	2	
Springfield	2	0	0	0	0	0	1	0	0	5	27
Worcester	3	3	0	0	0	3	1	0	0	4	32
Rhode Island:											
Pawtucket	0	0	0	0	0	0	0	0	0	0	5
Providence	2	11	0	0	0	3	2	4	0	3	53
Connecticut:											
Bridgeport	2	1	0	0	0	0	0	1	1	0	29
Hartford	2	1	0	0	0	6	2	1	0	15	37
New Haven	2	1	0	0	0	0	2	2	0	8	29
MIDDLE ATLANTIC											
New York:											
Buffalo	6	11	0	0	0	7	2	3	0	12	101
New York	34	35	0	0	0	[2] 82	45	54	4	143	1,200
Rochester	2	1	0	0	0	3	1	0	0	4	66
Syracuse	3	5	0	0	0	1	2	0	0	5	34

[1] No estimate made.

[2] Pulmonary tuberculosis only.

City reports for week ended September 17, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
MIDDLE ATLANTIC—continued											
New Jersey:											
Camden	2	0	0	0	0	1	1	1	0	1	29
Newark	5	4	0	0	0	8	2	1	0	53	91
Trenton	0	2	0	0	0	4	1	1	0	0	45
Pennsylvania:											
Philadelphia	23	26	0	0	0	25	14	10	0	31	372
Pittsburgh	15	10	0	0	0	10	4	4	0	31	134
Reading	1	0	0	0	0	1	1	1	0	1	25
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	5	4	0	0	0	13	2	5	1	3	118
Cleveland	12	14	0	0	0	14	5	4	0	37	160
Columbus	4	5	0	0	0	4	1	0	0	3	83
Toledo	5	6	0	0	0	8	3	0	0	8	80
Indiana:											
Fort Wayne	1	0	0	0	0	0	1	0	0	0	13
Indianapolis	3	8	0	0	0	4	3	1	0	16	101
South Bend	2	0	0	0	0	2	0	2	0	1	19
Terre Haute	1	1	0	0	0	0	0	0	0	0	17
Illinois:											
Chicago	34	29	1	0	0	42	9	5	0	163	645
Springfield	1	0	0	0	0	0	1	2	0	0	15
Michigan:											
Detroit	30	38	1	0	0	15	6	4	1	87	239
Flint	5	15	0	0	0	3	1	0	0	2	31
Grand Rapids	3	1	0	0	0	0	0	1	0	2	35
Wisconsin:											
Kenosha	0	3	0	0	0	1	0	0	0	1	5
Madison	1	9	0	0	0	0	0	0	0	7	
Milwaukee	12	10	0	0	0	9	0	0	0	34	100
Racine	2	5	0	0	0	1	0	0	0	43	11
Superior	1	1	1	0	0	0	0	0	0	0	9
WEST NORTH CENTRAL											
Minnesota:											
Duluth	4	1	0	0	0	0	1	0	0	4	21
Minneapolis	19	15	0	0	0	3	2	2	0	0	78
St. Paul	7	6	1	0	0	4	2	1	0	11	61
Iowa:											
Davenport	0	0	0	0			0	0		4	
Sioux City	1		0				0				
Waterloo	1	0	0	0			0	0		0	
Missouri:											
Kansas City	3	1	0	0	0	3	2	1	0	7	101
St. Joseph	0	0	0	11	0	0	0	0	0	1	35
St. Louis	11	10	0	0	0	11	7	7	0	22	214
North Dakota:											
Fargo	1	2	0	0	0	0	0	1	0	0	4
Grand Forks	1	0	0	0			0	0		0	
South Dakota:											
Aberdeen	2	0	0	0			0	0		1	
Sioux Falls	0	1	0	0			0	0		0	
Nebraska:											
Lincoln	1	2	0	0	0	0	0	6	0	0	14
Omaha	2	2	0	0	0	1	1	0	0	0	60
Kansas:											
Topeka	1	1	0	0	0	0	1	0	0	13	8
Wichita	1	6	0	0	0	0	2	0	0	0	25
SOUTH ATLANTIC											
Delaware:											
Wilmington	1	1	0	0	0	4	0	1	0	0	27
Maryland:											
Baltimore	6	8	0	0	0	7	12	4	1	26	213
Cumberland	0	0	0	0	0	0	1	0	0	2	8
Frederick	0	0	0	0	0	0	0	0	0	0	3

City reports for week ended September 17, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
SOUTH ATLANTIC—continued											
District of Columbia:											
Washington	5	7	1	0	0	11	4	1	0	3	119
Virginia:											
Lynchburg	0	0	0	0	0	0	1	0	1	0	10
Norfolk	1	2	0	0	0	2	1	0	0	5	
Richmond	5	4	0	0	0	2	2	0	0	0	43
Roanoke	1	2	0	0	0	1	2	0	0	0	19
West Virginia:											
Charleston	1	1	0	0	0	2	2	2	0	0	24
Wheeling	2	1	0	0	0	1	1	2	0	2	17
North Carolina:											
Raleigh	0	0	0	0	0	0	1	0	0	0	8
Wilmington	0	0	0	0	0	2	1	0	0	0	16
Winston-Salem	1	5	1	0	0	1	2	0	0	4	18
South Carolina:											
Charleston	0	0	0	1	0	4	3	6	1	0	19
Columbia	0	0	0	0			1	0		1	13
Greenville	0	0	0	0	0	0	1	0	0	0	7
Georgia:											
Atlanta	4	10	0	1	0	2	4	0	0	1	76
Brunswick	0		0				0				
Savannah	0	0	0	0	0	1	1	1	0	0	26
Florida:											
Miami		0		0	0	1		1	1	0	24
St. Petersburg	0		0		0	0	0		0		7
Tampa	0	2	0	0	0	3	0	0	0	2	30
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0		0				1				
Lexington		1		0	0	1		0	0	5	17
Louisville	2	2	0	0	0	5	5	4	0	0	65
Tennessee:											
Memphis	1	3	0	0	0	3	5	8	0	0	78
Nashville	3	0	1	0	0	2	5	13	1	2	42
Alabama:											
Birmingham	4	4	0	0	0	4	5	3	1	1	63
Mobile	0	0	0	0	0	1	0	0	0	0	19
Montgomery	0	0	0	0	0	0	1	2	0	0	
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	0	0	0			0	2		0	
Little Rock	1	3	0	0	0	2	2	0	0	0	
Louisiana:											
New Orleans	2	0	0	0	0	16	4	4	0	5	154
Shreveport	1	1	0	0	0	1	2	0	0	1	26
Oklahoma:											
Oklahoma City	2	2	0	1	0	1	2	0	1	0	31
Texas:											
Dallas	2	3	1	1			2	2		9	
Galveston	0	0	0	0	0	0	0	0	0	0	16
Houston	0	2	0	0	0	3	1	1	1	0	47
San Antonio	0	1	0	0	0	2	0	0	0	0	35
MOUNTAIN											
Montana:											
Billings	1	0	0	0	0	0	1	0	0	[illegible]	4
Great Falls	1	0	1	1	0	0	1	0	0	0	4
Helena	0	0	0	0	0	0	0	0	0	0	3
Missoula	0	0	0	0	0	0	0	1	0	0	6
Idaho:											
Boise	0	0	0	0	0	0	1	0	0	0	3
Colorado:											
Denver	4	5	1	1	0	6	3	0	1	2	71
Pueblo	1	0	0	0	0	0	1	1	0	[illegible]	9

City reports for week ended September 17, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
MOUNTAIN—con.											
New Mexico:											
Albuquerque	0	0	0	0	0	5	2	1	0	0	14
Utah:											
Salt Lake City	1	6	0	1	0	1	2	2	0	2	25
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	2
PACIFIC											
Washington.											
Seattle	6	0	1	0			2	0		3	
Spokane	4	2	1	9			1	0		2	
Tacoma	2	0	1	2	0	1	0	2	0	0	18
Oregon.											
Portland	4	3	2	8	0	3	3	0	0	0	47
California.											
Los Angeles	8		2				5				
Sacramento	1	0	0	2	0	1	1	0	0	0	12
San Francisco	6	9	1	0	0	7	1	1	0	6	128

Division, State, and city	Meningococcus meningitis: Cases	Meningococcus meningitis: Deaths	Lethargic encephalitis: Cases	Lethargic encephalitis: Deaths	Pellagra: Cases	Pellagra: Deaths	Poliomyelitis (infantile paralysis): Cases, estimated expectancy	Poliomyelitis (infantile paralysis): Cases	Poliomyelitis (infantile paralysis): Deaths
NEW ENGLAND									
Maine:									
Portland	0	0	0	1	0	0	0	5	0
Massachusetts:									
Boston	1	3	2	1	1	0	2	36	5
Fall River	0	0	0	0	0	0	0	1	0
Springfield	0	0	1	1	0	0	0	1	0
Worcester	0	0	0	0	0	0	0	2	1
Rhode Island.									
Providence	0	0	0	0	0	0	0	1	0
Connecticut:									
Bridgeport	0	0	0	0	0	0	0	1	0
Hartford	0	0	0	0	0	0	0	2	0
New Haven	0	0	0	0	0	0	1	2	0
MIDDLE ATLANTIC									
New York:									
Buffalo	0	0	0	0	0	0	1	0	1
New York [1]	5	2	2	2	0	0	11	53	8
New Jersey:									
Newark	1	0	1	0	0	0	0	6	0
Trenton	0	0	0	0	0	0	0	1	0
Pennsylvania:									
Philadelphia	1	0	0	1	0	0	1	0	0
Pittsburgh	0	0	0	0	0	0	1	2	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	0	0	0	0	0	0	1	1	0
Cleveland	1	0	0	0	0	0	1	8	0
Columbus	0	0	0	0	0	0	0	1	0
Toledo	0	0	0	0	0	0	0	1	0
Illinois:									
Chicago	2	0	0	0	1	1	4	13	1
Michigan:									
Detroit	0	0	0	0	0	0	1	4	0
Flint	0	0	0	0	0	0	1	3	0
Wisconsin:									
Madison	0	0	0	0	0	0	0	4	0
Milwaukee	1	0	1	0	0	0	0	4	1

[1] Rabies (human): 1 death at New York, N. Y.

City reports for week ended September 17, 1927—**Continued**

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	1	0	1	1	0	0	1	1	0
St. Paul	0	0	0	0	0	0	1	1	0
Missouri									
Kansas City	0	0	0	0	0	0	1	6	0
St. Louis	1	1	0	0	0	0	1	1	0
Nebraska:									
Lincoln	0	0	0	0	0	0	0	1	0
Omaha	0	0	0	0	0	0	0	2	1
Kansas:									
Topeka	0	0	0	0	0	0	0	1	0
SOUTH ATLANTIC [2]									
Maryland:									
Baltimore	1	0	0	1	0	0	2	0	0
West Virginia									
Charleston	0	1	0	0	0	0	0	1	1
Wheeling	0	0	1	1	0	0	0	2	0
South Carolina									
Charleston [3]	0	0	0	1	4	0	0	0	0
Columbia	0	0	0	0	0	1	0	0	0
Georgia									
Savannah [2]	0	0	0	0	1	0	0	0	0
Florida:									
Miami	0	0	0	0	1	0	------	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Lexington	0	0	0	0	0	0	0	1	1
Louisville	0	0	0	0	0	0	0	1	0
Tennessee:									
Memphis	0	0	0	0	1	1	0	0	0
Nashville	0	0	0	0	0	0	0	2	0
Alabama									
Birmingham	0	0	0	0	1	0	0	1	0
Mobile [2]	0	0	0	0	0	2	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	7	0	0	0
Louisiana:									
New Orleans	0	0	1	0	0	0	0	1	0
Shreveport	0	0	0	0	0	1	0	0	0
Oklahoma:									
Oklahoma City	0	0	0	0	0	0	0	2	1
Texas [2]									
Dallas	0	-------	0	-------	2	-------	0	5	-------
MOUNTAIN									
Montana:									
Missoula	3	1	0	0	0	0	0	0	0
New Mexico:									
Albuquerque	0	0	0	0	0	0	0	4	0
Utah:									
Salt Lake City	0	0	0	0	0	0	1	4	0
Nevada:									
Reno	0	0	0	0	0	0	0	2	0
PACIFIC									
Washington:									
Seattle	1	-------	0	-------	0	-------	0	2	-------
Spokane	1	-------	0	-------	0	-------	1	0	-------
Tacoma	0	0	0	0	0	0	0	7	0
Oregon:									
Portland	1	0	0	0	0	0	0	1	0
California:									
Sacramento	1	0	0	0	0	0	0	3	0
San Francisco	0	0	1	0	0	0	0	8	1

[2] Typhus fever; 1 death at Lynchburg, Va., 1 case at Savannah, Ga., 2 cases and 1 death at Mobile, Ala., and 1 case at Houston, Tex.

[3] Dengue: 1 case at Charleston, S. C.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended September 17, 1927, compared with those for a like period ended September 18, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, August 14 to September 17, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Aug. 21, 1926	Aug. 20, 1927	Aug 28, 1926	Aug 27, 1927	Sept 4, 1926	Sept. 3, 1927	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927
101 cities	68	80	65	81	73	[2] 84	75	[3] 92	84	[4] 100
New England	47	111	50	86	26	88	38	93	35	53
Middle Atlantic	59	94	56	78	59	77	53	90	63	106
East North Central	87	85	76	81	99	87	78	90	95	82
West North Central	83	44	81	54	67	69	75	64	95	[5] 129
South Atlantic	60	62	61	89	69	[2] 89	136	109	110	[6] 113
East South Central	21	51	57	61	41	51	103	107	109	[7] 124
West South Central	64	75	34	96	60	164	86	[8] 91	77	138
Mountain	146	54	73	135	91	117	173	153	237	225
Pacific	62	60	91	94	134	73	91	[9] 89	99	[10] 55

MEASLES CASE RATES

	Aug. 21, 1926	Aug. 20, 1927	Aug 28, 1926	Aug 27, 1927	Sept 4, 1926	Sept. 3, 1927	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927
101 cities	44	32	30	25	25	[2] 21	27	[3] 19	28	[4] 20
New England	52	84	38	58	33	58	35	63	19	30
Middle Atlantic	27	35	15	24	17	18	11	16	10	14
East North Central	72	13	43	13	31	11	20	15	23	18
West North Central	28	22	20	16	10	16	10	10	12	[5] 27
South Atlantic	35	27	15	31	9	[2] 18	19	14	9	[6] 15
East South Central	36	5	36	25	31	10	16	10	16	[7] 11
West South Central	9	42	4	17	0	42	4	[8] 10	4	17
Mountain	18	18	27	27	36	9	100	36	73	45
Pacific	78	71	94	52	91	42	158	[9] 33	212	[10] 59

SCARLET FEVER CASE RATES

	Aug. 21, 1926	Aug. 20, 1927	Aug 28, 1926	Aug 27, 1927	Sept 4, 1926	Sept. 3, 1927	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927
101 cities	48	50	55	54	51	[2] 57	58	[3] 52	65	[4] 60
New England	73	51	54	81	59	68	80	58	75	102
Middle Atlantic	29	31	32	36	25	38	32	30	44	46
East North Central	46	78	56	61	58	80	61	65	60	89
West North Central	119	64	133	62	131	69	93	91	120	[5] 98
South Atlantic	30	42	58	63	37	[2] 60	56	60	48	[6] 78
East South Central	36	20	62	87	57	76	109	97	119	[7] 40
West South Central	17	50	26	59	28	59	47	[8] 40	30	42
Mountain	36	81	64	63	82	63	73	54	82	99
Pacific	78	42	75	37	70	34	88	[9] 33	118	[10] 46

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.
[2] Greenville, S. C., not included.
[3] Dallas, Tex., and Tacoma, Wash., not included.
[4] Sioux City, Iowa, Brunswick, Ga., Covington, Ky., and Los Angeles, Calif., not included.
[5] Sioux City, Iowa, not included.
[6] Brunswick, Ga., not included.
[7] Covington, Ky., not included.
[8] Dallas, Tex., not included.
[9] Tacoma, Wash., not included.
[10] Los Angeles, Calif., not included.

Summary of weekly reports from cities, August 14 to September 17, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

SMALLPOX CASE RATES

	Week ended—									
	Aug. 21, 1926	Aug. 20, 1927	Aug. 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927
101 cities	2	5	4	5	2	[2] 4	2	[3] 3	2	[4] 5
New England	0	0	0	0	0	0	0	0	0	0
Middle Atlantic	1	0	0	0	0	0	0	0	0	0
East North Central	2	7	7	6	0	7	2	3	0	0
West North Central	4	10	0	4	0	2	2	12	0	[5] 23
South Atlantic	6	4	9	0	9	[2] 0	2	2	9	[6] 4
East South Central	5	25	0	25	10	0	0	10	0	[7] 0
West South Central	0	4	9	0	4	0	0	[8] 0	4	4
Mountain	0	18	0	27	0	36	0	9	0	27
Pacific	5	13	13	31	13	18	16	[9] 14	19	[10] 55

TYPHOID FEVER CASE RATES

	Aug. 21, 1926	Aug. 20, 1927	Aug. 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927
101 cities	41	37	40	31	40	[2] 32	45	[3] 29	53	[4] 34
New England	17	30	19	33	12	21	17	39	33	46
Middle Atlantic	34	20	39	21	34	28	34	27	55	37
East North Central	17	19	20	11	20	15	20	7	29	16
West North Central	48	38	42	20	42	10	50	32	26	[5] 25
South Atlantic	93	82	56	58	91	[2] 71	104	58	80	[6] 31
East South Central	186	219	233	204	176	183	284	112	248	[7] 162
West South Central	43	80	39	75	43	55	39	[8] 56	69	38
Mountain	73	27	18	45	9	54	18	63	82	36
Pacific	24	31	38	21	46	8	27	[9] 8	35	[10] 13

INFLUENZA DEATH RATES

	Aug. 21, 1926	Aug. 20, 1927	Aug. 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927
95 cities	3	4	3	5	3	[2] 4	4	[3] 5	4	[11] 4
New England	0	2	0	2	0	2	0	5	0	0
Middle Atlantic	1	2	3	2	2	3	4	3	3	4
East North Central	3	2	3	3	4	5	4	4	3	2
West North Central	2	0	8	2	4	4	0	0	4	4
South Atlantic	2	6	2	11	0	[2] 7	0	6	6	[6] 9
East South Central	0	10	0	15	16	5	0	10	5	[7] 0
West South Central	26	30	4	22	9	13	18	[8] 16	22	[8] 10
Mountain	0	0	18	9	9	18	36	9	0	9
Pacific	7	0	0	7	0	0	0	[9] 7	7	[10] 7

PNEUMONIA DEATH RATES

	Aug. 21, 1926	Aug. 20, 1927	Aug. 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927
95 cities	54	45	47	46	51	[2] 56	51	[3] 62	53	[11] 59
New England	40	49	33	51	50	49	40	65	54	39
Middle Atlantic	58	47	56	55	59	72	65	67	51	60
East North Central	35	35	37	34	34	51	37	59	40	53
West North Central	49	25	42	31	36	23	30	44	51	46
South Atlantic	87	53	59	37	64	[2] 42	44	50	55	[6] 78
East South Central	36	66	47	66	52	46	41	112	52	[7] 97
West South Central	66	69	71	65	49	82	97	[8] 63	115	[8] 73
Mountain	82	36	73	36	64	54	64	90	118	99
Pacific	78	72	21	62	78	55	57	[9] 48	53	[10] 55

[2] Greenville, S. C., not included.
[3] Dallas, Tex., and Tacoma, Wash., not included.
[4] Sioux City, Iowa, Brunswick, Ga., Covington, Ky., and Los Angeles, Calif., not included.
[5] Sioux City, Iowa, not included.
[6] Brunswick, Ga., not included.
[7] Covington, Ky., not included.
[8] Dallas, Tex., not included.
[9] Tacoma, Wash., not included.
[10] Los Angeles, Calif., not included.
[11] Brunswick, Ga., Covington, Ky., Dallas, Tex., and Los Angeles, Calif., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

THE FAR EAST

Report for week ended September 10, 1927.—The following report for the week ended September 10, 1927, was transmitted by the Eastern Bureau of the Health Section of the Secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Madagascar. Tamatave	0	0	0	0	5	----
Iraq: Basra	0	0	13	11	3	3
British India:						
Bombay	----	1	----	1	3	2
Madras	----	0	----	11	0	0
Calcutta	----	0	----	13	6	5
Bassein	----	2	----	0	0	0
Rangoon	----	2	----	0	0	0
Siam Bangkok	0	0	1	0	0	0
Dutch East Indies:						
Banjermasin	0	0	0	0	25	3
Surabaya	0	0	0	0	3	0

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
French Indo-China:						
Turane	0	0	10	4	0	0
Macao	0	0	----	1	0	0
China:						
Amoy	0	0	21	----	0	0
Shanghai	0	0	----	20	0	0
Canton	0	0	17	10	0	0
Kwantung:						
Dairen	0	0	1	0	0	0

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

Aden Protectorate.—Aden, Perim.

Arabia.—Bahrein.

Persia.—Bender-Abbas, Bushire, Lingah.

India.—Karachi, Chittagong, Cochin, Tuticorin, Negapatam, Vizagapatam, Moulmein.

Ceylon.—Colombo.

Portuguese India.—Nova Goa.

Federated Malay States.—Port Swettenham.

Straits Settlements.—Penang, Singapore.

Dutch East Indies.—Batavia, Pontianak, Semarang, Cheribon, Balikpapan, Padang, Belawan-Deli, Tarakan, Palembang, Samarinda, Menado, Makassar, Sabang.

Sarawak.—Kuching.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

Portuguese Timor.—Dilly.

Philippine Islands.—Iloilo, Jolo, Cebu, Zamboanga, Manila.

French Indo-China.—Saigon and Cholon, Haiphong.

China.—Tientsin, Tsingtao.

Hong Kong.

Wei-hai-wei.

Formosa.—Keelung, Takao.

Chosen.—Chemulpo, Fusan.

Manchuria.—Yingkow, Antung, Harbin, Mukden, Changchun.

Kwantung.—Port Arthur.

Japan.—Nagasaki, Yokohama, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns, Port Moresby.

New Guinea.—Port Moresby.

New Britain Mandated Territory.—Rabaul and Kokopo.

New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.

Western Samoa.—Apia.

New Caledonia.—Noumea.

Fiji.—Suva.

Hawaii.—Honolulu.

Society Islands.—Papeete.

AFRICA

Egypt.—Alexandria, Port Said, Suez.
Anglo-Egyptian Sudan.—Port Sudan, Suakin.
Eritrea.—Massaua.
French Somaliland.—Djibuti.
British Somaliland.—Berbera.
Italian Somaliland.—Mogadiscio.
Kenya.—Mombasa.
Zanzibar.—Zanzibar.
Tanganyika.—Dar-es-Salaam.
Seychelles.—Victoria.
Portuguese East Africa.—Mozambique, Beira, Lourenço-Marques.
Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.
Reunion.—St. Denis.
Mauritius.—Port Louis.
Madagascar.—Majunga, Diego-Suarez.

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from:

Aden Protectorate.—Kamaran.
Persia.—Mohammera.
Union of Socialist Soviet Republics.—Vladivostok.

Belated information:

Week ended August 27. *Pondicherry* and *Karikal*, nil.
Week ended September 3. *Pondicherry* and *Karikal*, nil.

Movement of infected ships

Singapore.—The pilgrim ship *Tangistan* arrived September 13 from Jeddah infected with smallpox.

ANGOLA

Communicable diseases—June, 1927.—During the month of June, 1927, communicable diseases were reported in Angola, according to regional divisions, as follows:

Disease	Coast districts	Interior	Land frontier	Total
Ancylostomiasis	7	1	56	64
Beriberi	10			10
Dysentery	24	10	5	39
Filariasis	3			3
Influenza	327	204	97	628
Leprosy	1		2	3
Malaria	473	135	216	824
Measles	1			1
Mumps	14			14
Pneumonia	35	16	10	61
Puerperal fever	1			1
Recurrent fever			1	1
Smallpox	4		9	13
Tetanus		1		1
Trypanosomiasis	45	15	27	87
Tuberculosis	16	5	4	25
Typhoid fever	2			2
Whooping cough	5			5
Yaws	84	16	62	162

CANADA

Communicable diseases—Week ended September 17, 1927.—The Canadian ministry of health reports cases of certain communicable diseases from seven Provinces of Canada for the week ended September 17, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario[1]	Manitoba	Saskatchewan	Alberta	Total
Influenza	8			1		11		20
Poliomyelitis				5		1	46	52
Smallpox	1			12	7		5	25
Typhoid fever	1	2	20	29	2	2	6	62

[1] Late reports for week ended September 3, 1927: Cerebrospinal fever, 2; smallpox, 11; typhoid fever, 14. For week ended September 10: Poliomyelitis, 3; smallpox, 17; typhoid fever, 6.

Communicable diseases—Quebec—Week ended September 17, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended September 17, 1927, as follows:

Disease	Cases	Disease	Cases
Chicken pox	2	Scarlet fever	37
Diphtheria	40	Tuberculosis	33
Influenza	1	Typhoid fever	20
Measles	9	Whooping cough	32

Further relative to poliomyelitis—British Columbia.—Information received under date of September 16, 1927, shows poliomyelitis present in epidemic form in the Okanogan Valley, the city of Kelowna reporting several cases of mild type. It was stated that schools and theaters had been closed. In the Kootenay district, where the disease first appeared, September 15, there were reported four cases at Rossland, one case at Slocan City, and one case at Trail, where a total of 16 cases with three deaths had been reported. At Vancouver two cases with one fatality were reported during the month of September, 1927.

Typhoid fever—Montreal—January 2–September 24, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	May 21, 1927	770	26
Jan. 15, 1927	4	3	May 28, 1927	353	38
Jan. 22, 1927	1	2	June 4, 1927	239	37
Jan. 29, 1927	3	1	June 11, 1927	128	36
Feb. 5, 1927	1	0	June 18, 1927	86	
Feb. 12, 1927	0	0	June 25, 1927	75	23
Feb. 19, 1927	1	2	July 2, 1927	66	21
Feb. 26, 1927	1	1	July 9, 1927	52	10
Mar. 5, 1927	9	1	July 16, 1927	39	4
Mar. 12, 1927	203	4	July 23, 1927	22	9
Mar. 19, 1927	383	14	July 30, 1927	23	10
Mar. 26, 1927	568	22	Aug. 6, 1927	16	5
Apr. 2, 1927	649	48	Aug. 13, 1927	20	5
Apr 9, 1927	386	40	Aug. 20, 1927	14	4
Apr. 16, 1927	175	38	Aug. 27, 1927	8	3
Apr. 23, 1927	125	43	Sept. 3, 1927	27	
Apr. 30, 1927	105	23	Sept. 10, 1927	17	
May 7, 1927	106	19	Sept. 17, 1927	13	2
May 14, 1927	367	16	Sept. 24, 1927	6	3

ESTONIA

Communicable diseases—July, 1927.—During the month of July, 1927, communicable diseases were reported in the Republic of Estonia as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	1	Scarlet fever	250
Diphtheria	31	Tuberculosis	97
Measles	98	Typhoid fever	32

Population, 1,114, 630.

LATVIA

Communicable diseases—July, 1927.—Communicable diseases were reported in the Republic of Latvia during the month of July, 1927, as follows:

Disease	Cases	Disease	Cases
Anthrax	1	Poliomyelitis	1
Cerebrospinal meningitis	6	Puerperal fever	2
Diphtheria	18	Rabies	1
Dysentery	3	Scarlet fever	86
Erysipelas	13	Tetanus	2
Influenza	2	Trachoma	12
Leprosy	1	Typhoid fever	74
Measles	334	Typhus fever	6
Paratyphoid fever	2	Whooping cough	82

Population, estimated, 1,950,000.

MEXICO

Typhoid fever—Nogales—August 22–September 23, 1927.—During the period August 22 to September 23, 1927, typhoid fever was reported prevalent at Nogales, State of Sonora, Mexico, with an unreported number of cases and with several fatalities. The outbreak was attributed to the water supply.

SENEGAL

Plague—Yellow fever—August 29–September 11, 1927.—During the two weeks ended September 11, 1927, plague was reported in Senegal as follows: Dakar—cases 14, deaths, 8; Rufisque and suburbs—cases 13, deaths, 10. In the interior of the country, in the district of Baol, plague was reported during the two weeks with 32 cases and 11 deaths, and in the district of Cayor 184 cases with 85 deaths. At the interior town of Thies, two fatal cases were reported.

Yellow fever.—During the same two-week period 2 fatal cases of yellow fever were reported on the Island of Goree, vicinity of Dakar. During the week ended September 4, 1 fatal case (European) was reported at Tiaroye, and at Thies 2 suspect deaths were reported. During the week ended September 11, 1 case (European) at Tivaouane and 1 suspect death (Syrian) at Thieppe were reported.

VIRGIN ISLANDS

Communicable diseases—August, 1927.—During the month of August, 1927, communicable diseases were notified in the Virgin Islands of the United States as follows:

Island and disease	Cases	Remarks	Island and disease	Cases	Remarks
St. Thomas and St. John:			St. Croix:		
Gonorrhea	5		Gonococcus infection.	1	
Syphilis	5	1 imported; 3 secondary.	Pellagra	1	
Tuberculosis	1	Chronic pulmonary.	Syphilis	9	Secondary.
			Uncinariasis	13	

YUGOSLAVIA

Communicable diseases—August, 1927.—During the month of August, 1927, communicable diseases were reported in Yugoslavia as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	208	32	Scarlet fever	522	77
Cerebrospinal meningitis	7	5	Tetanus	29	13
Diphtheria	189	30	Typhoid fever	697	59
Dysentery	571	65	Typhus fever	9	1
Measles	159	1	Whooping cough [1]	130	2

[1] Reports from Aug. 1 to 14 only.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended October 7, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
India:				
Bombay	Aug. 7-13	12	11	
Calcutta	Aug. 7-20	53	25	
Madras	Aug. 21-27	82	53	
Rangoon	Aug. 7-13	1	1	
Siam				July 31-Aug. 13, 1927: Cases, 17; deaths, 15. Apr. 1-Aug. 13, 1927: Cases, 656; deaths, 456.
Bangkok	Aug. 7-13	1		District.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Algeria:				
Oran	Sept. 1-10	1	1	Old case. Entered hospital Aug. 21-31, 1927; died Sept. 5, 1927.
India:				
Bombay	Aug. 7-13	3	3	
Madras Presidency	July 31-Aug. 6	149	58	
Rangoon	Aug. 7-20	6	6	
Java:				
Batavia	do	46	45	Province.
East Java and Madura—Surabaya	July 24-Aug. 6	22	22	
Senegal				Aug. 29-Sept. 11, 1927: Cases, 245; deaths, 116.
Cities—				
Dakar	Aug. 29-Sept. 11	14	8	
Rufisque	do	13	10	Including suburbs.
Interior—				
Baol district	do	32	11	
Cayor	do	184	85	
Thies	do	2	2	Town in interior.
Siam	Apr. 1-Aug. 13			Cases, 10; deaths, 7.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria:				
Oran	Sept. 1-10	4		
Angola	June 1-30	13		
Do	July 1-15	5		
Brazil.				
Rio de Janeiro	Aug. 21-27	3	4	

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended October 7, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Canada:				
Alberta	Sept. 11-17	5		
Manitoba	do	7		
Winnipeg	Sept. 10-16	4		From outside localities.
Nova Scotia	Sept. 11-17	1		
Ontario	do	12		
Ottawa	Sept. 18-24	6		
Toronto	Sept. 4-10	1		
Great Britain:				
England and Wales	do	140		
India:				
Bombay	Aug. 7-13	5	3	
Calcutta	Aug. 7-20	9	8	
Madras	Aug. 21-27	2		
Rangoon	Aug. 7-20	8	2	
Iraq:				
Basra	Aug. 14-20	1	1	
Italy:				
Rome	July 4-10	1		Consular district.
Java:				
Batavia	Aug. 14-20	4		
East Java and Madura—Surabaya	July 24-30	1		
Persia:				
Teheran	May 23-June 22		6	
Portugal:				
Oporto	Sept. 3-9	1		
Siam				July 31-Aug. 13, 1927: Cases, 20; deaths, 7. Apr. 1-Aug. 13, 1927: Cases, 192; deaths, 49.
Sumatra:				
Medan	Aug. 14-20	1		
Syria:				
Damascus	Aug. 20-31			
Union of South Africa:				
Orange Free State	Aug. 7-13			Outbreaks in one district.

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Chile:				
Valparaiso	Aug. 21-27		1	
Latvia				July, 1927: Cases, 6.
Mexico:				
Mexico City	Sept. 4-10	4		Including municipalities in Federal District.
Palestine				Aug. 30-Sept. 5, 1927: Cases, 3. In three localities.
Haifa	Aug. 23-29	2		
Poland				Aug. 7-13, 1927: Cases, 11; deaths,
Union of South Africa:				
Cape Province—				
Port Elizabeth	Aug. 7-13	1		In native. Outbreaks in four districts.
Yugoslavia	Aug. 1-31	9	1	

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Senegal:				
Island of Goree	Aug. 22-Sept. 4	2	2	Vicinity of Dakar.
Tiaroye	do	1	1	
Tivaouane	Sept. 5-11	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 30, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-Aug. 13	11	3	
Canton	May 1-July 23	16	7	
Foochow	July 24-30			Present.
Hong Kong	July 17-23	2	2	
Kulangsu	June 21	1		
Shanghai	June 19-25	2		
Do	July 31-Aug. 20		16	In international settlement and French concession.
Swatow	May 15-Aug. 6	138	13	
India	Apr. 17-July 30			Cases, 125,674; deaths, 71,156.
Bombay	May 8-Aug. 6	103	50	
Calcutta	do	580	355	
Karachi	May 29-June 4	1	1	
Madras	June 19-Aug. 20	678	333	
Rangoon	May 8-July 30	17	13	
India, French settlements in	Mar. 30-June 30	15	8	
Indo-China (French)	Apr. 1-July 10			Cases, 11,145.
Annam	do	1,467		
Cambodge	do	235		
Cochin-China	do	1,354		
Saigon	June 4-July 21	10	4	
Tonkin	Apr. 1-June 30	8,089		
Iraq:				
Baghdad	July 24-30	29	18	
Basra	July 17-Aug. 27	353	264	
Japan:				
Yokohama	July 31-Aug. 6	1	1	
Persia:				
Abadan	July 24-Aug. 13	215	183	
Ahwaz	July 31-Aug. 13	20	13	
Minab	Aug. 7-13		23	
Mohammerah	July 17-Aug. 27	194	155	
Nasseri	July 19-31		10	
Philippine Islands:				
Manila	July 17-23	1		
Bulacan Province	June 7-July 8	3	2	
Leyte Province—				
Barugo	June 29	1	1	
Carigara	June 23	1	1	Final diagnosis not received.
Palo	May 18	1		
Siam	May 1-July 30			Cases, 252; deaths, 150.
Bangkok	do	43	13	
On vessel:				
S. S. Adrastus	Reported Aug. 6	1	1	At Yokohama, Japan.
S. S. War Mehtar (oil tanker).	Aug. 4	1	1	At Saffagha, Egypt.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	Aug. 21-31	1		
Oran	do	4	3	
Argentina	Jan. 1-Aug. 2			Cases, 80; deaths, 44.
Buenos Aires	Apr. 10-May 7	4	3	
Cordoba	Jan. 11-Aug. 6	52	29	
Corrientes	June 1	1	1	
Entre Rios	Mar. 29-Aug. 13	8	1	
Santa Fe	Apr. 28-May 16	4	3	
Territory—				
Chaco—				
Barranqueras	May 29	2	2	
Formosa	June 25	3	2	
Pampa	July 27-Aug. 2	4		
Rio Negro	Aug. 6	1		
City—				
Merou	Reported July 14			Present.
Rosario	May 7	1	1	
Santa Fe	May 16	4	2	
Azores:				
Ribeira Grande	June 12-18			9 miles from port.
St. Michaels Island	May 15-July 30	3		

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 30, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
British East Africa:				
Kenya	Apr. 24-July 2	60	14	
Mombassa	July 24-30	1	1	
Nairobi	May 22-28	6		
Tanganyika	Mar. 29-May 28		37	
Do	July 24-Aug. 6		10	
Uganda	Jan. 1-Feb. 28	138	121	
Do	Mar. 27-June 18	366	300	
Canary Islands:				
Laguna district—				
Tejina	June 17	1		
Ceylon:				
Colombo	May 1-July 2	17	11	Plague rats, 4.
China:				
Amoy	July 3-23			Present in surrounding country.
Tientsin	Aug. 14-20	2		
Ecuador:				
Guayaquil	June 1-July 31			Rats taken, 48,290; found infected, 34.
Egypt	May 1-July 8			Cases, 7, deaths, 2.
	Aug. 6-12			Cases, 5
Alexandria	June 4-10	1		
Beni-Souef	June 4-July 13	5	2	
Biba	do	1		At Nama.
Dakhalia	June 24-July 9	6	1	
Minia	Aug. 8-9	4		
Port Said	June 24-July 21	4	1	
Tanta district	June 4-10	1		
Greece	May 1-June 30	4	3	
Athens	June 1-Aug. 20	3		Including Piraeus.
Mytilene	Aug. 9	1		
Patras	May 30-Sept. 4	8	1	
Hawaii Territory:				
Hamakua	July 15			1 plague rodent.
Honokaa	May 17-23	2	2	
Kukuihaele	Aug. 12-17	1	1	1 plague rodent.
Paauilo	July 26-Aug. 1		4	
India	Apr. 17-July 16			Cases, 21,814; deaths, 8,324.
Bombay	May 8-Aug. 3	87	74	
Madras	May 1-July 30	403	194	
Rangoon	May 8-Aug. 6	53	49	
Indo-China (French)	Apr. 1-July 10	32		
Kwang-Chow-Wan	May 21-July 10	68		
Iraq:				
Baghdad	Apr. 8-May 28	12	1	
Java:				
Batavia	May 1-July 23	182	183	Province.
East Java and Madura	May 22-July 16	28	27	
Pasoeroean Residency	May 9			Outbreak reported at Nagdiwano.
Surabaya	Apr. 17-July 23	34	33	
Madagascar				Mar. 16-Apr. 30, 1927: Cases, 256; deaths, 135.
Province—				
Ambositra	Mar. 16-July 15	94	87	
Antsirabe	Mar. 16-May 15	8	8	
Miarinarivo (Itasy)	Mar. 16-July 15	65	59	
Moramanga	May 16-July 15	24	23	
Tananarive	Mar. 16-July 15	221	194	
Tananarive Town	Mar. 16-June 30	22	20	
Nigeria	Mar. 1-May 31	228	177	
Peru	Apr.-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	do	13	4	
Lima City	Apr. 1-30	5	1	
Senegal	May 23-Aug. 21			Cases, 656; deaths, 413.
Baol	June 2-Aug. 28	68	36	
Cayor Frontier	July 4-Aug. 28	353	240	
Dakar	June 20-Aug. 28	123	82	
Facel	July 6	17	8	
Guindel	June 20-23	11	2	
M'Bour	July 6-10	28	23	
Medina	June 13-19	2	2	
Pout	July 4-10	1		
Rufisque	May 23-Aug. 28	207	156	
Thies district	May 23-July 30	27	9	
Tivaouane	June 2-July 17	50	32	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 30, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Siam	Apr. 1-July 30			Cases, 10; deaths, 7.
Bangkok	May 8-June 11	2	1	
Syria:				
Beirut	June 11-July 10	3		
Tunisia	Apr. 21-July 10	144		
Tunis	July 25-Aug. 1	1		
Turkey.				
Constantinople	May 13-19	1		
Union of South Africa:				
Cape Province—				
Maraisburg district	May 1-14	2	2	Native.
Orange Free State—				
Edenburg district	July 17-26	3	3	Natives; on farm.
Rouxville district	July 24-Aug. 6	2	2	
On vessel:				
S. S. Avoroff	June 24-30	1		On Greek warship at port of Athens.
S. S. Capafric	Aug. 23	3	1	At Duala, French Cameroons, from Nigeria
S. S. Elcano	Aug. 19	1		At Piraeus, Greece.
S. S. Madonna	Aug. 24	1		At Dakar, Senegal; from ports south.
S. S. Ransholm	Aug. 5	3		At Geflo, Sweden, from Rufisque, Senegal.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-July 10			Cases, 648.
Algiers	May 11-June 30	8		
Oran	May 21-Aug. 10	47		
Arabia.				
Aden	July 17-Aug. 1	2	1	
Brazil				
Porto Alegre	July 1-31	5		
Rio de Janeiro	May 22-Aug 20	12	8	
British East Africa:				
Kenya	Apr 24-May 14	7	14	
Tanganyika	Mar. 29-June 18	2	22	
Zanzibar	Apr. 1-May 31	19	7	
British South Africa:				
Northern Rhodesia	Apr. 30-Aug. 12	111	2	
Canada	June 5-Sept. 10			Cases, 447.
Alberta	June 12-Sept. 10			Cases, 97.
Calgary	June 12-Aug. 27	9		
British Columbia—				
Vancouver	May 23-Sept. 4	4		
Manitoba	June 5-Sept. 3			Cases, 31.
Winnipeg	June 12-Aug. 27	17		
Ontario	June 5-Aug. 27			Cases, 177.
Ottawa	June 12-Sept. 17	132		
Sarnia	Aug. 7-13	1		
Toronto	June 19-July 23	9		
Quebec	June 19-Aug. 27	15		
Saskatchewan	June 12-Sept. 10			Cases, 104.
Moose Jaw	Aug 14-Sept. 10	14		
Regina	July 17-Aug. 27	10		
Ceylon	May 1-7			Cases, 3; deaths, 1.
Colombo	July 31-Aug. 6	1	1	
China.				
Amoy	May 8-28	1		
Do	July 3-16			Present in surrounding country.
Antung	July 4-31	3		
Cheefoo	May 8-14			Present.
Foochow	May 8-Aug. 13			Do.
Hong Kong	do	20	19	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-July 30	8		
Dairen	May 2-July 3	10	5	
Fushun	May 15-July 30	10		
Harbin	June 13-July 10	4		
Kai-Yuan	July 3-9	2		
Mukden	May 22-July 30	6		
Pensihu	July 3-9	1		
Ssupingkai	May 8-July 9	3		
Tientsin	May 8-July 30	18		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 30, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Chosen	Feb. 1-May 31			Cases, 451, deaths, 195.
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr. 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr. 1-30	1		
Curaçao	May 29-June 4	1		Alastrim
Ecuador:				
Guayaquil	June 1-30	2		
Egypt	May 7-July 29			Cases, 21; deaths, 3.
Alexandria	May 21-June 17	4	1	
Cairo	Jan 22-Apr. 15	14	3	
France	Apr 1-June 30			Cases, 178.
Lille	July 24-30	1		
Paris	May 21-July 31	14	2	
Gold Coast	Mar. 1-May 31	33	7	
Great Britain:				
England and Wales	May 22-Sept. 3			Cases, 2,818.
Birmingham	Aug 14-20	1		
Bradford	May 29-June 11	2		
Cardiff	June 19-July 2	4		
Leeds	July 17-Sept 3	13		
Liverpool	July 17 30	1		
London	May 15-June 18	2		
Newcastle upon Tyne	June 12-Aug. 13	5		
Sheffield	June 12-Aug 6	25		
Stoke-on-Trent	Aug 21-27	1		
Scotland—				
Dundee	May 29-Sept. 3	6		
Greece	June 1-30	14		
Salonika	July 12-Aug 15		2	
Guatemala:				
Guatemala City	June 1-30		9	
Guinea (French)	June 4-10	9		
India	Apr 17-July 30			Cases, 68,687; deaths, 18,006.
Bombay	May 28-Aug. 6	222	144	
Calcutta	May 8-Aug. 6	374	286	
Karachi	May 15-Aug 6	10	5	
Madras	May 22-Aug 13	22	6	
Rangoon	May 8-Aug. 6	174	53	
India, French Settlements in	Mar. 20-June 18	174	111	
Indo-China (French)	Mar. 21-July 20			Cases, 314.
Saigon	May 14-July 21	3	1	
Iraq:				
Baghdad	Apr. 10-16	2		
Basra	Apr. 10-July 16	2	1	
Italy	Apr. 10-May 21	13		
Rome	June 13-19	1		
Jamaica	May 29-Aug. 27	30		Reported as alastrim.
Japan	Apr 3-May 7			Cases, 19
Nagasaki City	June 20-Aug. 14	26	7	
Taiwan Island	May 21-31	1		
Java:				
Batavia	May 22-July 23	3		
East Java and Madura	Apr. 24-July 9	12		
Latvia	Apr. 1-30	1		
Mexico	Mar. 1-31			Deaths, 162.
Durango	June 1-30		1	
La Oroya	Apr. 1-June 30			Present.
Monterey	July 1-31	6	4	
San Luis Potosi	May 29-Aug. 13		11	
Tampico	June 1-July 31	1	2	
Torreon	Aug 7-13		1	
Morocco	Apr. 1-June 30	154		
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in two localities.
Pasir Residency	Apr. 30-May 6			Epidemic outbreak.
Samarinda Residency	May 21-27			Do.
Nigeria	Mar. 1-May 31	2,077	513	
Paraguay:				
Asuncion	July 10-23		2	
Persia:				
Teheran	Feb. 21-May 22		8	
Poland	Apr. 10-Aug. 6	20	2	
Portugal:				
Lisbon	May 29-Aug. 6	17	1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 30, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Senegal:				
Medina	July 4-10	7		
Siam	Apr. 1-July 30			Cases, 172; deaths, 42.
Bangkok	May 1-July 23	13	7	
Spain:				
Valencia	May 29-June 4	2		
Straits Settlements	June 12-18			Cases, 3.
Singapore	Apr. 1-June 18	7	2	
Sumatra:				
Medan	June 5-11	2		
Switzerland:				
Berne	June 26-July 2	1		
Syria:				
Damascus	Aug. 11-20	1		
Tunisia	Apr. 1-June 10			Cases, 10.
Tunis	June 1-10	1		
Union of South Africa:				
Cape Province	July 17-23			Outbreaks.
Elliott district	May 11-June 10			Do.
Idutywa district	July 3-9			Do.
Kalanga district	May 11-June 10			Do.
Mount Ayliffe district	July 31-Aug. 6			Do.
Transvaal—				
Barberton district	May 1-7			Do.
Venezuela:				
Maracaibo	July 12-18		1	

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-July 20			Cases, 399; deaths, 39.
Algiers	May 11-Aug. 31	26		
Oran	May 21-Aug. 31	34		
Bulgaria	Mar. 1-June 20			Cases, 206; deaths, 18.
Sofia	June 4-Aug. 5	2		
Chile:				
Antofagasta	Apr. 16-May 31	1		
Concepcion	May 29-June 4		1	
La Calera	Apr. 16-May 31	1		
Ligua	Mar. 16-31	2		
Puerto Montt	Apr. 16-May 31	1		
Santiago	do	5	1	
Talcahuano	July 10-16		1	
Valparaiso	Apr. 16-Aug. 6	4	1	
China:				
Manchuria—				
Harbin	July 25-31	3		
Mukden	May 29-June 4	1		
Tientsin	July 10-16	1		
Chosen	Feb. 1-May 31			Cases, 512; deaths, 42.
Chemulpo	May 1-July 31	1		
Gensan	do	4		
Seoul	Apr. 1-July 31	32	3	
Czechoslovakia	do			Cases, 55.
Egypt	May 28-July 29			Cases, 120; deaths, 18.
Alexandria	May 21-Aug. 5	13	5	
Cairo	Jan. 15-May 20	37	12	
Estonia	Apr. 1-June 30			Cases, 5.
Greece	June 1-30	2		
Athens	June 1-July 31	1	9	
Iraq:				
Baghdad	Apr. 24-30	1		
Irish Free State:				
Cork County	July 3-9	1		In urban district.
Latvia	Apr. 1-June 30	26		
Lithuania	Feb. 1-June 30	303	37	
Mexico	Feb. 2-Mar. 31			Deaths, 88.
Mexico City	May 29-Sept. 3	49		Including municipalities in Federal district.
San Luis Potosi	July 31-Aug. 6		1	
Morocco	Apr. 1-July 10	815		
Palestine	May 24-Aug. 8			Cases, 16.
Haifa	do	6		
Jaffa	Aug. 2-15	2		
Jerusalem	June 28-Aug. 15	3		
Mahneim	May 17-23	1		In Safad district.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to September 30, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Palestine—Continued.				
Nazareth	July 19-25	1		
Safad	May 17-Aug. 8	10		
Peru:				
Arequipa	Apr 1-30		1	
Poland	Apr. 10-Aug. 6	1,045	96	
Portugal:				
Lisbon	May 29-June 4	1		
Oporto	Aug 20-27	1		
Rumania	Apr. 3-June 25	923	61	
Spain:				
Seville	Aug 19-25		2	
Tunisia	Apr. 22-July 20			Cases, 158.
Tunis	July 5-Aug. 21	2		
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa	Apr. 1-30			Cases, 55; deaths, 8, native In Europeans, cases, 2.
Cape Province	Apr. 1-Aug. 6	42	5	
Albany district	June 5-11			Outbreaks.
East London	May 22-28	1		Do.
Glen Gray district	May 1-7			Do
Kentani district	June 26-July 2			Do
Qumbu district	May 1-7			Do
Umzimkulu district	June 26-July 2			Do.
Natal	Apr 1-Aug 6	7	3	
Impendhle district	June 5-11			Do
Orange Free State	Apr 1-July 23	5		
Transvaal	Apr. 1-30	1		
Johannesburg	July 3-Aug 20	19	5	
Yugoslavia	May 1-July 31			Cases, 15, deaths, 4.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Ashanti:				
Obuasi	Aug. 6	1	1	
Dahomey (West Africa):				
Porto Novo	July 1	1	1	In Syrian woman.
Gold Coast	Apr 1-May 31	45	20	
Do	Aug 4	2		
Ivory Coast	July 29	1	1	
Liberia				
Monrovia	May 29-July 8	4	5	
Senegal	May 27-July 31			Cases, 5; deaths, 2.
Dakar	July 9	1		
Do	Aug 8	2	2	
Do	Sept. 17			Present
Khombole	Aug 1-14	3		
M'Bour	May 27-June 10	5	5	
Ouakam	June 2-Aug. 14	4	2	
St. Louis	Aug 1-14	2	2	
Thies	July 10	1	1	In European.
Tivaouane	May 27-June 8	5	5	
Togoland:				
Meiatza	Aug 15-21	1	1	

TREASURY DEPARTMENT

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UNITED STATES PUBLIC HEALTH SERVICE

HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

Asst. Surg. Gen. R. C. WILLIAMS, *Chief of Division*

The PUBLIC HEALTH REPORTS are issued weekly by the United States Public Health Service through its Division of Sanitary Reports and Statistics, pursuant to the acts of Congress approved February 15, 1893, and August 14, 1912.

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CONTENTS

PUBLIC HEALTH REPORTS

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PREVALENCE OF POLIOMYELITIS IN THE UNITED STATES

The telegraphic reports received from the State health officers for the week ended October 8, 1927, show 650 cases of poliomyelitis reported by 42 States, as compared with 675 cases reported by 44 States, for the week ended October 1, 1927. As compared with the preceding week, increases were recorded in New Mexico in the West; in Nebraska, Iowa, Michigan, and Oklahoma in the central area; and in Maine, Massachusetts, Vermont, and Rhode Island in the eastern part of the country. Decreases were shown for Oregon, California, and Colorado in the West; for Illinois, Indiana, Kansas, Minnesota, Missouri, Ohio, and Wisconsin in the central part; and for Connecticut, New Jersey, Pennsylvania, and West Virginia in the eastern section. The reports from States for the week ended October 8 will be found on page 2515.

The weekly telegraphic reports received from the State health officers for the 14 weeks from July 3 to October 8, 1927, show 5,227 cases of poliomyelitis, as compared with 1,340 cases for the corresponding period of 1926 and with 3,772 cases for the similar period of 1925. These current telegraphic reports may be incomplete in some instances. A table showing the reported monthly prevalence of poliomyelitis, by States, from January 1 to October 1, 1927, was printed in the Public Health Reports for October 7, page 2452.

The Susceptibility to Malaria Parasites and the Relation to the Transmission of Malaria of the Species of Anopheles Common in Southern United States

By M. A. Barber, Special Expert, W. H. W. Komp, *Associate Sanitary Engineer* and T. B. Hayne, *Technical Assistant, United States Public Health Service.*

Considerable data have accumulated regarding the susceptibility to malaria parasites of the *Anopheles* common in southern United States. The object of this paper is to summarize this material, to add some observations of our own, and to discuss the relation of these species to the transmission of malaria.

The species of *Anopheles* found generally in southern United States are *A. quadrimaculatus*, *A. punctipennis*, and *A. crucians*. *A. pseudopunctipennis*, abundant in parts of Texas and New Mexico, may be included in this list.

Infection Under Laboratory Conditions.—*A. quadrimaculatus* was proved to be susceptible to malaria parasites by Thayer (1) in 1900. He infected mosquitoes with both the tertian and the estivo-autumnal types. In 1915 King (2) (3) infected *A. punctipennis* with tertian parasites and in 1916 (4), with estivo-autumnal. In 1916 Mitzmain (Mayne) (5) (6) (7) proved the infectivity of *A. crucians* to both tertian and estivo-autumnal parasites. By the end of 1916 the susceptibility of these three species of *Anopheles* to both tertian and estivo-autumnal parasites had been well established. In all combinations the formation of sporozoites in the salivary glands had been demonstrated.

In 1910 Darling (8) infected *A. pseudopunctipennis* with estivo-autumnal parasites, and in 1926 we demonstrated that this species is also susceptible to tertian. (See Table 1, Lot 12.) No experiments have been recorded showing the susceptibility of any of these species to quartan parasites, except those of Beyer (9) and his associates, whoreported the infectibility of *A. maculipennis* (*A. quadrimaculatus*) with this type.

In Table 1 are shown the results of certain laboratory infection experiments in which two or more species of *Anopheles* were fed on the same gametocyte carrier. All were "positive" experiments, that is, at least one mosquito was infected in each experiment, so that the gametocyte carrier was known to have viable gametocytes. In all of the experiments the different species were fed at the same time. In our own experiments, Nos. 7, 8, 9, 10, 11, and 12, and in those of King, the mosquitoes were fed but once, all were fed at the same time, and only those known to have taken blood are included in the reckoning.

There is little indication in Table 1 of a greater infectibility under laboratory conditions of any one of the three species compared. The numbers are small in many of the experiments, but the number of comparisons is great enough to bring out any striking difference in susceptibility should such be present.

In our experiment No. 10, comparing *A. quadrimaculatus* with *A. crucians*, not only were the positive percentages similar, but in each species sporozoites were found in oocysts in the gut on the ninth day after the mosquitoes were fed.

Table 1.—*Laboratory experiments in which the infectivity of different species of Anopheles is compared*

Batch No.	Author.	Reference	Type of parasite and average number gametocytes per 100 leucocytes	Species of Anopheles	Number dissected	Per cent post	Average number of oocysts per gut in positives
1	Mayne	(7)	T. O. 15	Crucians	19	10.5	
				Punct	38	28.9	
				Quad	2	0.0	
2	do	(10)	E A	Punct	52	26.9	67.0
				Quad	8	50.0	55.5
3	King	(3)	T. 13.0	Punct	6	83.3	
				Quad	3	100 0	
4	Darling	[1] (8)	E. A	Malefactor	3	0.0	
				Albimanus	7	85.7	[2]
				Pseudopunct	5	40 0	7.0
5	Barber, Komp, Hayne		T. 4.7	Crucians	33	97 0	187.0
				Punct	5	100 0	57
6	do		T. 2.8	Crucians	3	100 0	68.7
				Quad	2	100.0	10.0
7	do		T 0.8	Crucians	3	66.7	13 5
				Punct	2	100 0	38.0
8	do		T. 2.5	Crucians	14	50.0	1.4
				Quad	39	48-7	4.2
9	do		E. A. 1.3	Punct	8	25.0	37.0
				Quad	8	0.0	
10	do		T. 14 5	Pseudopunct	8	12.5	1.0
				Quad	2	100 0	4 5

[1] Carrier No. 48987. [2] Many

In addition to the data quoted, King (in litt.) has supplied us with additional information on some of his experiments in comparison of the three species. This is shown in Table 1a below:

TABLE 1A

Case No.	Date fed	Gametes per 100 leucocytes	Punctipennis		Crucians		Quadrimaculatus	
			Number fed	Positive	Number fed	Positive	Number fed	Positive
TERTIAN PARASITES								
510	Nov. 12		1	1			4	3
ESTIVO-AUTUMNAL PARASITES								
511	Nov. 13	526	7	1			6	2
511-6	Nov. 23	93	3	2	7	4	2	1
511-7	Nov. 24	136			1	1	2	0
511-9	Nov. 27	36			4	4	1	0

In Table 2 we have consolidated the results of the experiments in Table 1 and have added to them the results of all "positive" batches, regardless of whether two or more species were compared in an experiment. In Group I we have assembled the results of our own positive experiments, 34 batches; in Group II, those of Mayne and King, whose work was carried out under conditions somewhat comparable with our own.

Table 2.—*Summary of laboratory infection experiments, including all positive batches*

GROUP I. BARBER, KOMP, HAYNE (34 BATCHES)

Species of Anopheles	Type of malaria parasite	Number dissected	Number positive	Per cent positive
Crucians	T. and E. A. combined	222	89	40.1
Punctipennis	do	28	9	32.1
Quadrimaculatus	do	299	105	35.1
All species	T	352	136	38.6
Do	E. A	205	68	33.2
Total		557	204	36.6

GROUP II. MAYNE AND KING (11 BATCHES)

Species of Anopheles	Type of malaria parasite	Number dissected	Number positive	Per cent positive
Crucians	T. and E A. combined	31	11	35.5
Punctipennis	do	119	37	31 1
Quadrimaculatus	do	41	15	36.6
All species	T	80	29	36 3
Do	E. A	111	34	30.6
Total		191	63	33 0

In Table 2 the positive percentages are very similar in both groups and in all combinations; there is little indication that any species is more susceptible than another under laboratory conditions. In neither Table 1 nor Table 2 does it appear that a given species of *Anopheles* is more susceptible to one type of malaria parasite than to another.

The results of some of the earlier infection experiments in which the proportion positive was recorded are as follows: Beyer (8), *quadrimaculatus*-tertian 3 dissected, 1 positive; Woldert (11), *quadrimaculatus*-estivo autumnal, 7 dissected, 2 positive; Hirschberg (12), *quadrimaculatus*-estivo autumnal, 48 dissected, 8 positive.

Mitzmain (Mayne) (5) fed 219 specimens of *A. punctipennis* on two crescent carriers and obtained no infections, although 74 specimens of *A. quadrimaculatus* fed on the same carriers gave an infection rate of 13.8 per cent, and 3 specimens of *A. crucians* gave a rate of 33.3 per cent. The *Anopheles* were fed on many different days, and the author does not indicate the days on which the positives were obtained nor how many *A. punctipennis* were fed on those days. These data, therefore, can not properly be included in Table 1.

Mitzmain (Mayne) (13) proved the infectibility of *A. punctipennis* with *P. vivax* by transmitting the disease to 14 human beings by means of this species.

Table 3 presents the results of dissections of *Anopheles* caught in the wild state.

TABLE 3.—*Anopheles infected in nature*

Observer	Reference	Locality	Species of Anopheles	Number dissected	Number positive	Per cent infected, gut	Sporozoites in salivary glands
Mayne[1]	(14)	Talladega Springs, Ala.	Punct.	----------	1	--------	0
			Quad.	742	2	--------	0
Mayne[2]	(15)	Monroe, La.	Crucians	20	1	5.0	----------
			Punct.	17	0	0.0	----------
			Quad.	709	17	2.4	14
Metz	(16)	Polk County, Fla.	Crucians	379	2	0.5	0
			Quad.	423	4	0.9	0
King	(17)	Mound, La.; Parchman, Miss.	Crucians	169	0	0.0	----------
			Punct.	36	0	0.0	----------
			Quad.	5,673	31	0.5	2
King*	(18)	Mound, La.	Quad.	[1] 2,365 [2] 9,340	14	0.6	[3] 10
Darling	(19)	Georgia	Crucians	571	0	0.0	----------
			Punct.	77	0	0.0	----------
			Quad.	1,531	60	3.9	----------
Mayne	(20)	Okefenokee Swamp, Ga.	Crucians	307	0	0.0	----------

[1] Stomachs dissected. [2] Salivary glands dissected. [3] 0.107 per cent.

* In addition to the figures given above, King (in a personal communication) gives the following results based on collections made in "special" places, including houses in which known cases of malaria occurred or in which infected mosquitoes had previously been found: Two hundred and seventy-five *A. quadrimaculatus* caught in such places were dissected, and of these, 23 contained oocysts and one had sporozoites in the salivary glands. This gives a gut-infection rate of 8.3 per cent.

It is shown in Table 3 that each of the three species common in southern United States has been found infected under natural conditions. Sporozoites have been found in the salivary glands of both *A. quadrimaculatus* and *A. crucians* in the wild state. In most of the observations in which species were compared, *A. quadrimaculatus* has shown a higher percentage of infection than *A. crucians* or *A. punctipennis*. Combining the results of all observers in the dissections where the species of *Anopheles* were distinguished and where stomach infections are recorded, we have the following:

	Dissected	Per cent infected
A. crucians	1,446	0.02
A. punctipennis	130	0.0
A. quadrimaculatus	10,641	1.1

Natural infections have been recorded of *A. pseudopunctipennis* in Argentina by several investigators. (*Vide* Covell, G.: "A critical review of the data recorded regarding the transmission of malaria by the different species of *Anopheles*; with notes on distribution, habits, and breeding places." From Indian Medical Research Memoirs, Memoir No. 7, July, 1927, p. 67.)

HABITS OF ADULT ANOPHELES WITH RELATION TO MAN *

In Table 4 are shown some observations with reference to daytime resting places of certain species of *Anopheles*.

TABLE 4.—*Resting places of adult Anopheles within and in the vicinity of dwellings*

Observer	Reference	Locality	Species of Anopheles	Number of Anopheles found— Total number	Inside dwellings	Under houses and in porches	In privies	In barns and other outbuildings
Mayne	(14)	Talladega Spgs., Ala	Punct.	934	28	65	89	754
			Quad.	438	60	40	42	296
Metz	(21)	Montgomery, Ala.	Cruc.	509	2	415	1	181
			Punct.	23	0	21	0	2
			Quad.	47	7	28	0	12
Carter, Le Prince, Griffitts	(22)	Talladega Spgs., Ala.	Punct.	115	1	23	--------	91
			Quad.	238	67	56	115	--------
Le Prince	(23)	North Carolina	Punct.	6	6	--------	--------	--------
			Quad.	859	859	--------	--------	--------
		South Carolina	Punct.	250	41	209	--------	--------
			Quad.	1,515	1,379	136	--------	--------
Barber, Komp, Hayne	--------	Stuttgart, Ark.	Cruc.	897	4	--------	2	891
			Quad.	29,738	--------	--------	6,405	22,352
Mayne	(20)	Okefenokee Swamp, Ga.	Cruc.	10,725	1,180	1,609	965	6,971
King, Bull	(24)	Mound, La.	Quad.	4,276	370	2,389	--------	1,517

From Table 4 it appears that all common species of *Anopheles* seek dwellings and may be found resting inside of them. The number of *A. quadrimaculatus* found in dwellings usually far exceeds that of either of the other two species.

Borden (25) states that among *Anopheles* collected at Army posts in the United States, 73.2 per cent of *A. quadrimaculatus* were found in barracks or dwellings, while the percentages of *A. crucians*, *A. punctipennis*, or *A. pseudopunctipennis* found in such habitations were small.

The resting place of adult mosquitoes does not give wholly conclusive evidence as regards their avidity for human blood. One species may be as eager for human blood as another, but may be more prone to seek some place outside of dwellings after feeding. Some direct observations may be mentioned. *A. crucians* is a troublesome day-time biter along the coast. Mayne (20) reports that those bred in the fresh water of Okefenokee Swamp may enter houses in large numbers and attack man. Smith (26) states that at Cape May, N. J., *A. crucians* was a more annoying indoor biter than any other species of mosquito, including *C. pipiens*. *A. punctipennis* in large numbers has been observed to attack persons sitting on a veranda at night. Carter, Le Prince, and Griffitts (22) report that of 110 *Anopheles* biting persons on a veranda at night, all were *A. punctipennis*.

Preference for man or domestic animals.—In 1920 Barber and Hayne (27) made some experiments at Stuttgart, Ark., in which two large traps, one baited with a man and the other with pigs, were compared with respect to their attractiveness for *A. quadrimaculatus* and *A. crucians*. The traps were so constructed that ingress was

easy for mosquitoes in search of blood, but the escape of a large proportion of the fed *Anopheles* was prevented by mosquito netting. The aggregate catch of six successive nights in the man-baited trap was 615 *Anopheles*, of which 277, or 45.1 per cent, were *A. quadrimaculatus* and 338, or 54.9 per cent, were *A. crucians*. In the pig-baited trap the catch for the same nights was 659 *Anopheles*, of which 529, or 80.3 per cent, were *A. quadrimaculatus* and 130, or 19.7 per cent, *A. crucians*. The proportion varied greatly on different nights, and the aggregate may not fairly represent the preference of the different species for man or pig blood, but under these conditions man proved to be fully as attractive for *A. crucians* as the pig.

The method of Uhlenhuth (28), making use of the precipitin test for determining the origin of the blood found in the stomachs of mosquitoes, has been developed by Bull and King (29) in this country, and used by them in the study of the blood preferences of different species of *Anopheles*. Those authors (24) tested serologically over 7,000 *A. quadrimaculatus* collected in the region of Mound, La. Of those caught from inside of houses, 30.6 per cent had fed on man, but of the general collection, including those caught inside of houses, under houses, and in outbuildings, only 4.3 per cent had fed on the blood of man. Among 125 *A. crucians*, 4.8 per cent gave positive test for human blood; among 79 *A. punctipennis*, none gave a positive test.

Darling (30) used the precipitin test in comparing the origin of the blood meal of *Anopheles* found in Georgia. Among 272 specimens of *A. quadrimaculatus* he found 32 per cent with a positive test for human blood; among 236 *A. crucians* he found only 1.2 per cent; and among 10 *A. punctipennis*, none.

In laboratory feeding experiments all species may bite freely. Barber and Hayne (27) found that engorgement with pig blood did not modify the subsequent avidity of a lot of *A. crucians* for human blood, nor did it materially affect the susceptibility of that species to malaria parasites.

Comparing the different observations regarding the blood-seeking habits of the three species of *Anopheles*, it appears that all of them may at times be avid for the blood of man. *A. quadrimaculatus* appears to be the more domestic of the different species and is often found in dwellings. The avidity for human blood and the blood preference of different species seems to vary a good deal with time and locality. Certainly the evidence thus far adduced would not exclude any species as a possible vector of malaria.

Epidemiological data.—There are but few localities in this country where only one species of *Anopheles* is found, so that most of the positive evidence regarding the relationship of a species to malaria has to be based on observations where one or another species greatly predominates.

Metz (16) reports a high history index of malaria near Montgomery, Ala., where *A. crucians* predominated almost to the exclusion of any other species. He states that there are similar *crucians*-malaria localities in Florida. Frank (31) reports a parasite index of 8.4 per cent among 3,959 persons in Harrison County, Miss., for the period 1918–19. According to a survey made by one of us (Komp), *A. crucians* was abundant at the time and practically the only species present. Mayne (20) has made a study of a region in the Okefenokee Swamp in Georgia, where neither histories nor blood examinations gave any evidence of indigenous malaria, although *A. crucians*, the only *Anopheles* species present, was very abundant, and was known to enter houses and bite man freely.

Carter (32) quotes observations made in different parts of Georgia and South Carolina where little or no malaria has ever been reported in spite of the presence of numerous *A. punctipennis*. Doctor Carter was inclined to believe that *A. punctipennis* is not an important vector of malaria in southern United States, although he states that *A. punctipennis* unquestionably does convey some malaria.

Fisher (33) states that abundant malaria was found at Chester, S. C., where *A. punctipennis* was the only species found. The author believes the evidence "rather conclusive" that *A. punctipennis* was responsible for the malaria there.

Lenert (34) also states that *A. punctipennis* is the malaria carrier of the foothills of the Sierra Nevada in California.

Herms (35) states that *A. punctipennis* is an efficient carrier of malaria in the northern counties of California where malaria is prevalent. In the Sierra counties, which, in 1916–17, showed a malaria death rate of 9.1 per 100,000, the proportion of anopheline species was as follows: *A. punctipennis*, 66.9 per cent; *A quadrimaculatus*, 15.8 per cent.

All observers agree as to the relationship of *A. quadrimaculatus* and malaria prevalence. In the Mississippi Delta region *A. quadrimaculatus* greatly predominates over all other species. *A. crucians* and *A. punctipennis* are present, but generally are rare during the warmer months of the year. In that region malaria is prevalent. Bass (36) has reported high rates of malaria in Bolivar County, Miss. King (24) states that the malaria rate for the general population in Madison County, La., for 1922 was 43.2 per cent, and that *A. quadrimaculatus* is the principal malaria carrier there. We have repeatedly found high rates in certain localities in Leflore County, Miss.

Darling (30) reports that in parts of the State of Georgia there is a direct correlation of the incidence of *A. quadrimaculatus* and malaria prevalence, while in regions where *A. punctipennis* and *A. crucians* are almost exclusively found, malaria is infrequent or entirely absent.

Recently, Smillie (37) described a malaria epidemic at Gantt, Ala., where a dam, built for a hydroelectric plant, caused the overflow of a woodland region and greatly increased the production of *A. quadrimaculatus*. The malaria epidemic so coincided with the increase and distribution of *A. quadrimaculatus* in time and locality as to leave no doubt as to the relationship of the two. Malaria in relatively low degree had been present in the region prior to the overflow—a few cases had occurred among the workmen engaged in building the dam two years before the epidemic. *A. crucians* and *A. punctipennis* were present in the region but did not increase with *A. quadrimaculatus* at the time of the formation of the new lake. Whether the earlier malaria was due in part to species other than *A. quadrimaculatus* was not definitely shown, but the author concludes that this was the only species concerned in the epidemic.

Herms (35) states that in the coastal and inland coastal counties of California where *A. pseudopunctipennis* is the predominant species, it is a very weak carrier of malaria or is not a carrier at all.

Lenert (34) (reference already quoted) states that *A. pseudopunctipennis* is not a dangerous carrier of malaria.

Darling (8) concludes that *A. pseudopunctipennis* was only slightly, if at all, concerned in the transmission of malaria in Panama.

Muehlens (38) states that *A. pseudopunctipennis* is the chief malaria carrier in Argentina.

During a recent survey along the Rio Grande River in Texas and New Mexico we found a high rate of malaria prevailing in certain localities where *A. pseudopunctipennis* was the predominant species, but *A. quadrimaculatus* was also present in effective numbers.

Seasonal incidence of anopheline species.—*A. quadrimaculatus* is found the year round in many States, both in the larval and the adult stage, but is primarily a warm-weather breeder, and becomes most abundant in the period between May and September, inclusive.

King (18) has found sporozoites in the glands of this species caught in the wild state in June. It may then begin transmitting malaria relatively early in the season.

A. punctipennis tends to diminish in numbers as warm weather advances, but in some localities we have found it to persist in considerable numbers throughout the summer.

A. crucians is, in our experience, the most adaptable of the three species to variations in temperature. It is often the most plentiful winter species, and, in some localities, often persists in large numbers throughout the summer. Generally throughout the Southern States *A. quadrimaculatus* is the dominating species during the summer and early autumn.

Discussion.—The different sorts of evidence which may go to "incriminate" a species of *Anopheles* are of varying values. Cer-

tainly the fact that a species may be infected under laboratory conditions does not prove that it is of sanitary importance. Probably any species of *Anopheles* could be infected if one made trials enough with good gametocyte carriers. We get some evidence of comparative value when different species are exposed to the same carrier at the same time, but, as shown in Table 1, we may get widely variable results when conditions are supposed to be comparable. The variables are so numerous that only longer series could give much weight in comparison.

The formation of sporozoites under laboratory conditions adds to the evidence of the susceptibility of a species. In our laboratory experiments the great majority of the oocysts observed in mosquitoes which had survived 12 days or more had degenerated without the formation of sporozoites in the salivary glands. But we obtained no evidence that such degeneracy was a mark of the resistance of an anopheline species or that it occurred more often in one species than in another. It is possible that we have in the degeneration of oocysts a key to some little-understood phases of the transmission of malaria, but only a long and carefully controlled series of experiments could prove anything definite.

It is usually considered that infection in nature offers better proof of the rôle of a species in the transmission of malaria than its infection in the laboratory. But it is doubtful whether the occasional discovery of an individual with oocysts adds much to the positive laboratory evidence when we deal with species even occasionally attacking man. One would expect to find an infected specimen if the search were sufficiently prolonged in a locality where malaria is abundant. The comparison of the rate of infection with oocysts in different species among collections taken at the same time and place offers evidence of much greater value, since it not only proves that a species is susceptible, but gives some measure of the numbers taking the blood of infected persons. The sporozoite rate among specimens caught in the wild state gives, in addition, a measure of the longevity of the mosquito, and offers the best evidence of all; but the infection rate is often so small that only large series give sufficient basis for comparison of species with species.

Any evidence regarding the avidity of a species for human blood is of value in judging of its relation to the transmission of malaria. Judging from our information the house-seeking habits and animal blood preference of *Anopheles* mosquitoes are rather variable factors. So far as our present problem is concerned, all of our three more common species have, on occasion, proved to be voracious biters of man, and none of them can be exculpated because of showing too little preference for human blood.

The value of positive epidemiological evidence is great. Where the transmission of malaria occurs in the presence of a single species

of *Anopheles* the relationship is, of course, quite clear. But the absence of malaria, even in a population unscreened and exposed to the bites of mosquitoes, does not exculpate a species of *Anopheles* prevalent there. We have found very low malaria rates in the rice country of Louisiana, where both *A. quadrimaculatus* and *A. crucians* are abundant throughout the summer, and in a region in southern Alabama where both these species occurred in effective numbers. Both in this country and in Europe it is possible to find regions nearly or quite exempt from malaria in populations little protected from the bites of species known to be suitable vectors of malaria. So many factors other than the mere presence of a malaria-carrying species of *Anopheles* are concerned with malaria prevalence that the absence of the disease does not exculpate any particular kind of mosquito.

RELATION OF DIFFERENT SPECIES OF ANOPHELES TO MALARIA CONTROL MEASURES

In the light of the evidence thus far advanced (in relation to the infectivity of the different species of *Anopheles*) it is unquestioned that *A. quadrimaculatus* is an important vector of malaria in southern United States. With regard to *A. punctipennis* and *A. crucians* the evidence is less decisive. It probably may be laid down as a general principle that a species of *Anopheles* readily infected in the laboratory, found in nature with sporozoites in the salivary glands, avid for the blood of man, and occurring in considerable numbers during the warmer portions of the year, should be considered an effective carrier of malaria in the absence of any but the most conclusive negative epidemiological evidence. *A. crucians*, in some parts of this country, fulfills all tests of numbers, avidity for human blood, and susceptibility, and could hardly be acquitted on the epidemiological evidence thus far presented. Neither this species nor *A. punctipennis* can be wholly ignored when they occur in considerable numbers during the summer, as they both do in certain localities in this country.

It should not be forgotten, moreover, that a species apparently harmless in one region may be an important carrier in another. *A. bifurcatus*, in Holland a wild species never entering houses, may, in Jerusalem, where breeding conditions are radically different, become urban and domestic and the chief carrier of malaria (39). *A. hyrcanus* is little feared in the Philippine Islands or the Federated Malay States, but the type or a variety becomes a serious menace in the rice fields of Java (40).

H. F. Carter (39) states that *A. maculatus*, a recognized malaria carrier in the Malay States and associated with an increased prevalence of malaria in the lower elevations of the hill country of Ceylon,

is prevalent in regions of higher altitude in Ceylon, where the spleen rate is less than 5 per cent, although in such altitudes (1,700–2,000 feet) the temperature is not low enough to decrease the susceptibility of the anopheline host.

How far the relationship of a species to the transmission of malaria may be affected by local differences within the same country has not been fully studied. Certainly reports of differences with respect to the transmission of malaria among anopheline species have often been founded on insufficient evidence.

However important *A. crucians* or *A. punctipennis* may be under special conditions, *A. quadrimaculatus* is certainly the most effective carrier of malaria in southern United States and should be the first species considered in any malaria control measures, an opinion which seems to have been long and generally recognized among malaria workers in this country. In 1919, Griffitts (42), speaking of the species of American *Anopheles* mentions *A. quadrimaculatus* as "the one that is now generally regarded as the most important vector of malaria in the greater portion of our malarious districts."

Komp (43) speaks of this species as "the most effective carrier of malaria in this country."

Le Prince (44) states that there seems to be no doubt that *A. quadrimaculatus* is responsible for nearly all of the malaria in Southern States, and that for all practical purposes in malaria control, drainage is sufficient which considers only the potential breeding areas of *A. quadrimaculatus*.

Darling (19), judging from the infectivity rate of *Anopheles* caught in nature, from preferential feeding habits, the correlation between malaria prevalence and the seasonal density, and the epidemiological evidence, concludes that *A. quadrimaculatus* is the sole carrier of sanitary importance in certain regions of Georgia.

Smillie (37), on the basis of work conducted in Alabama by him and his coworkers, is of the opinion that for all practical purposes the control of *A. crucians* and *A. punctipennis* may be neglected, and that malaria control operations in southern United States may be generally simplified by confining operations to ponds, essentially breeding places of *A. quadrimaculatus*.

The value of differentiating between anopheline species in malaria control measures must depend on locality. With places where malaria is absent or appears in negligible quantity we are not concerned, whatever species is present. Where one species so far dominates that the others are negligible, as in the Yazoo-Mississippi Delta region, the dominant species alone need be considered, whatever the breeding place. It is only in localities in which two or more species occur in effective numbers that we need consider species differences in malaria control measures.

Where larvicidal measures are employed in such localities it is important to know to what extent the different species are localized in certain breeding places during the warm season of the year. It has been our experience, based on observations in Georgia, Alabama, Louisiana, and Mississippi, that *A. quadrimaculatus* is rather adaptive in the matter of breeding places. Earlier generalizations as to selective breeding places did not hold with wider experience. The term "pond" in our experience does not properly describe the important breeding places of *A. quadrimaculatus* as they are found generally in southern United States. We have found abundant production of *A. quadrimaculatus* not only in ponds and lakes, but in various stagnant and semistagnant waters, such as irrigated rice fields, ditches, borrow pits, sluggish streams, swamps in great variety, and pools of various sorts, including those formed in the beds of drying streams and in depressions filled by summer rains or by springs.

In certain localities *A. quadrimaculatus* may be so far restricted to certain breeding places that preliminary surveys could be dispensed with before beginning malaria control work. In regions with which we are familiar, however, we have found so much variability of locality and season in the breeding of this species that preliminary surveys and continual inspections throughout the season would be necessary. A specific observation may be mentioned. In a region in southern Georgia we found the chief midsummer breeding place of *A. quadrimaculatus* in a flowing stream fed by the effluent water of a septic tank. This stream flowed far into the country and seemed to be the preferred place of *A. quadrimaculatus*, although pond water was abundant in the vicinity. In this instance, as in many others we have noted, the character of the water seemed to be a more important consideration than the size or contour of the body in which it is contained.

For the present, each locality must be a problem in itself. As our knowledge of the character of different localities grows, we may come to depend more on the generalization and less on the dipper.

Several other species of *Anopheles* are either rare in southern United States, or where they occur in large numbers, appear occasionally or only locally. Among these species, *A. atropos*, *A. walkeri*, and *A. barberi* have never been proved to be susceptible to malaria parasites. *A. albimanus*, which has been reported from southern Texas, was long ago proved by Darling (8) to be the chief malaria vector in Panama.

SUMMARY

The three species of *Anopheles* common in southern United States, *A. quadrimaculatus*, *A. punctipennis* and *A. crucians*, are all easily infected with malaria parasites in the laboratory. All have been found infected in nature, *A. quadrimaculatus* and *A. crucians* with

sporozoites in the salivary glands. *A. punctipennis* has been proved capable of transmitting malaria to man under laboratory conditions. *A. quadrimaculatus* is the summer species of widest distribution. It is the one most commonly found in dewllings and has been found infected in nature in higher proportion than the other species. Epidemiological evidence goes to show that it is the most important carrier of malaria in southern United States. In any antimosquito malaria control work this species should receive first attention, but we do not believe that the evidence thus far adduced can exculpate either *A. punctipennis* or *A. crucians* as possible carriers of malaria.

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PREDICTING EPIDEMICS OF PLAGUE IN THE PUNJAB

A PRELIMINARY NOTE BY LIEUT. COL. W. H. C. FORSTER, I. M. S., DIRECTOR OF PUBLIC HEALTH OF THE PUNJAB, PRESENTED AT THE APRIL, 1927, MEETING OF THE COMMITTEE OF THE INTERNATIONAL OFFICE OF PUBLIC HYGIENE BY LIEUT. COL. J. D. GRAHAM, I. M. S., COMMISSIONER OF PUBLIC HEALTH TO THE INDIAN GOVERNMENT, DELEGATE OF BRITISH INDIA.

The curve of gross mortality in the Punjab for the last 26 years presents a series of extreme oscillations, caused by the outbreaks in epidemic form of certain diseases the most important of which is plague, which caused approximately 3,000,000 deaths in the period 1901–1924.

An idea of the devastations produced by this disease can be formed by considering that during the period 1901–1911 the population of the Province was reduced 0.18 per 100 in the British territory and 0.48 per 100 in the States under nat ve rule.

During the period 1919–1922 the disease was latent, but the hopes engendered were dissipated in 1924 by a severe epidemic, followed by another in 1926. The number of deaths attributed to these two epidemics is 360,000. These experiences have demonstrated that a new study should be undertaken regarding the problem of plague from the point of view of prophylaxis. In this memorandum there is considered the relationship between some of the results following the researches upon the subject n the Punjab.

We have prepared a monthly mortality curve for the Punjab for the period 1901–1924. By the expression "monthly mortality" we mean the total number of deaths actually known to be from plague for each of the 12 months during the entire period considered. For particular reasons we have adopted this plan of laying out a curve. But the curve given is not a graphic representation; we give the figures themselves in Table 1:

[1] Translation from the Bulletin Mensuel, June, 1927.

TABLE 1.—*Monthly mortality from plague in the Punjab during the period 1901–1924*

January	5, 290	September	226
February	9, 029	October	751
March	23, 034	November	1, 826
April	41, 556	December	3, 234
May	32, 077		
June	5, 909	Average monthly mortality	10, 315
July	728		
August	122		

From the month of August, the lowest point, the curve rises slowly but regularly each month until February; from this point it rises rapidly to its maximum in April, then declines slowly in May; the decline is then as rapid as had been the increase. The curve goes above the average monthly mortality only during three months of the year—March, April, and May—but during these months it is much above the average.

This curve reveals a serious difficulty in the practice of prophylaxis in the disease. When the epidemic is at its peak, there is little recourse to anything besides vaccination to reduce the mortality. Vaccination being voluntary, there is no demand for it except when there is an epidemic, and then the demand is proportionate to the gravity of the epidemic. The table below compares the monthly data relative to vaccinations for 1925 (year in which there was a moderate epidemic) with the corresponding figures for 1926 (year of severe epidemic). The figures in parentheses represent the monthly mortality.

TABLE 2.—*Comparison of monthly vaccinations with monthly mortality (mortality figures in parentheses)*

Year	January	February	March	April
1925	43, 729 (4, 455)	51, 480 (5, 093)	70, 281 (10, 040)	60, 961 (11, 885)
1926	33, 558 (2, 660)	61, 943 (7, 285)	99, 117 (19, 678)	222, 999 (34, 739)

As the mortality for April varies between 195,000 (1907) and 651 (1921), it is evident that the demand for antiplague vaccine fluctuates considerably. But antiplague vaccine as furnished by the Haffkine Institute requires four or five months for preparation and maturation, for the reaction caused by the inoculation of immature vaccine is severe enough to make it preferable not to use it at that stage.

Antiplague vaccine should be ordered at least four months in advance, or that needed during the epidemic period—March, April, and May—should be estimated in November of the preceding year. An estimate too low would be distressing, and one too high would be

financially burdensome, for the vaccine costs 12,500 rupees per 100,000 doses. From this point of view alone the prediction of epidemics of plague is of considerable practicable importance, and it is this problem especially which prompted the study. The principal purpose was to find a "critical point" on the autumnal part of the curve, a point by which one could predict the height of the curve during the epidemic period of the following year with a reasonable accuracy. Up to the present time the following relationships have been detected:

1. If, in any year, the seasonal curve corresponds exactly to the monthly curve for the period 1901–1924, it would appear that there is no critical point from which to make a prediction of the height of the curve during the epidemic of the following year.

2. If, in any year, the seasonal curve deviates from the monthly curve in showing a December mortality below that for November, it follows that the height of the curve in the epidemic period of the following year can be predicted with very great accuracy.

This second conclusion is of great importance, but before considering it further it is best to adopt certain arbitrary definitions. If we term "index" the maximum reported monthly mortality during the epidemic period of the following year, we may say:

If the index is 3,000 or less, the epidemic is negligible.

If the index is greater than 3,000, but less than 6,000, the epidemic is light.

If the index exceeds 6,000, but is less than 12,000, the epidemic is moderate.

The phenomenon under consideration has occured six times during the period 1901–1926, and the data are given in the following table:

TABLE 3.—*November and December mortality and maximum monthly mortality in the following spring*

Year	November mortality	December mortality	"Index" following year	Type of epidemic following year
1907	1,245	1,103	10,459	Moderate
1912	334	299	6,994	Do.
1916	203	109	994	Negligible.
1919	172	118	1,496	Do.
1920	44	37	651	Do.
1926	795	713	(?)	(?)

It seems that there is a certain qualitative relation between the height of the curve during the period November–December and the index of the following year. If the critical portion of the curve is high, the index tends to touch, approximately, the limit of 12,000; if it is low, the index falls below the limit of 3,000; but no exact figures can be given the terms "high" and "low."

The most interesting point for the moment would be to predict that which will occur after 1926. What will 1927 bring us? In the first days of January, after the mortality for December was known, a "moderate epidemic" was predicted for 1927. At the present writing there are no indications that the prediction will not be true; unless we are destined for new experiences with regard to plague, the epidemic period is now too far advanced to upset the prediction.

The examples cited of the phenomenon are not numerous; one might say that they are too few to justify the drawing of any definite conclusions, but it must be recalled that we are not concerned here with the numerical expression of a problem of the biological order. What is aimed to establish is that if, instead of increasing monthly in a regular manner from August to April, the disease undergoes a regression in December, as is shown by the decline in the seasonal curve for that month, it follows that the regression reflects a very important evolution in the cycle rat–flea–plague. There is ample reason to believe that this proposition is correct, and, in that case, the number of examples is not of great importance.

Aside from the pneumonic form of plague, which plays no important part in the statistics of the Punjab, the mortality from plague is the expression of the number of infected fleas which attack man. The number of fleas depends on the number of rats and also on the cycle of reproduction of fleas. These two cycles are under the influence of different conditions, in a manner that it is possible that one is affected independently of the other. Experience indicates that the cycle of the fleas is the most subject to interruption, and it is that which plays the most important rôle in regard to the fluctuations in the mortality from plague. Up to the present, there have not been made, in the Punjab, direct observations on that subject, and difficulty is encountered in bridging that hiatus. That which follows, then, is only a theory, but that theory merits consideration. The observations which we present actually tend to indicate that the average number of fleas per rat increases slowly, but regularly, up to the spring season, when rats reproduce in great number, and when the reproduction of fleas seems equally to receive a great impetus. The number of fleas per rat, which is the lowest in August, increases gradually up to January; then the rise is sharp. The reproduction of the fleas is the only factor in this biological cycle, the progress of which is the same as that of plague mortality; it should logically be considered as the cause of the seasonal mortality fluctuations. Whether that conclusion is correct or not, it furnishes a plausible explanation of the phenomenon under consideration.

Beginning with September, the plague mortality, of no importance in that month, will be the total of the figures for the preceding month and for the first part of the month in question. Then, the mortality

for December will be the sum of the figures for November and for the first part of December. If in November the reproduction of fleas undergoes a great check, that fact ought to be reflected in the December mortality; and if that check continues in December, the result ought to manifest itself in the January mortality, which should, according to the theory, be less than that in December.

Humidity is a factor of primary importance in the cycle of flea reproduction, and, consequently, in what concerns the arid plains of the Punjab, it seems reasonable to suppose that a month of November without rain will cause a dimunition in the January mortality. That is what occurred in 1926–27. All the plague regions were without rain during November, December, and the first part of January, and, for the first time in the history of plague in the Punjab, the seasonal curve showed a decline not only in December but also in January.

An interesting point, and one which seems to emphasize the critical importance of November rains, is that, although the seasonal mortality curve may decline in October, that fact is not an indication of a low index for the following year. The following table gives the comparative monthly mortality figures for corresponding periods of 1925–26, and of 1926–27, the figures for 1925–26 furnishing the proof of the above statement.

TABLE 4.—*Comparative monthly mortality figures for 1925–26 and 1926–27*

Year	August	September	October	November	December	January	Index of following year
1925–26	196	158	47	295	1,050	2,660	35,000
1926–27	117	110	413	795	713	404	(?)

In 1925 the rains stopped abruptly in the middle of August, and there was no more rain until November, when the fall was excessive. In conformance to the reappearance of these rains, it will be noted that the seasonal curve dropped in September and October; the rains of November, however, brought a sharp rise that developed into a severe epidemic in the following spring.

The rains were normal in 1926, the monsoons ending toward the close of September. Then, with the exception of a rain of little importance in October, the plague regions were without rain until the end of January. The effect of that condition has already been indicated.

The correlation of the meteorological data with the cycle rat–flea–plague being a little difficult to determine, we shall summarize it up to the point where it should be subjected to mathematical analysis. For the time being the theory that we offer may be summed up as follows:

1. The seasonal curve of plague mortality in the Punjab for the period 1901–1924 shows a progressive and uninterrupted high monthly increase from August to the following April.

2. The number of fleas per rat shows, according to the data on hand, a similar curve.

3. The mortality from plague, other than pneumonic, being the expression of the number of infected fleas which have bitten human beings, it is logical to assume that the reproduction of fleas has an important influence upon the seasonal mortality curve.

4. As a corollary to (3), a check in the cycle of reproduction of fleas should be reflected in a corresponding decrease in the seasonal mortality curve.

5. Humidity being a factor of vital importance in the cycle of flea reproduction, it is reasonable to assume that, in the arid plains of the Punjab, that cycle is affected by the rains. Long dry periods during the fall and winter should retard flea reproduction and produce a corresponding drop in the seasonal mortality curve.

6. Analysis of statistical data for 26 years shows that a drop in the seasonal curve for December indicates no epidemic the following spring. In all the years observed, the outbreak following has been moderate or negligible, according to whether or nor the seasonal mortality was more or less high in November. That fact seems to furnish a basis for predicting the character of the spring epidemic.

7. A supplementary analysis demonstrates that a decline in the fall-winter part of the curve, whatever it may be in the other months, is not necessarily an indication that there will be no epidemic the following spring.

8. The available data seem to suggest that a decline in the fall-winter part of the seasonal curve is the result of dry weather, and that November rains are of great importance in determining the character of the spring outbreak.

Editorial note.—The prediction for 1927, based on the authors' hypothetical "critical" mortality for December, 1926, seems to have been fulfilled. According to the plague mortality figures for the Punjab published in the Epidemiological Report, issued by the health section of the League of Nations, the "index" for 1927 was 2,012, being the maximum monthly plague mortality—that reported for the month of April. The epidemic was, therefore, "negligible," according to the definition given by the authors. Fewer cases of plague have been reported throughout all India, however, during the first half of 1927 than during the corresponding period of any previous year. During the three weeks ended June 18, 1927, only 600 cases were reported, as compared with 7,594 during the corresponding period of the preceding year.

The monthly plague mortality in the Punjab for 1927, as given by the Epidemiological Report, is as follows:

	Deaths		Deaths
January [1]	404	To May 28	1, 233
February	589	May 29–June 18	178
March	1, 545	June 19–July 16	20
April	2, 012		

If extensive rat and flea surveys could be made in the Pubjab and the data correlated with meteorological data and plague mortality, the results would not only add information of great value to the epidemiology of plague generally but would also decisively support or invalidate the assumed critical December "index" for the Punjab, which seems to be supported by the data set forth above.

At the meeting of the First Pan American Conference of Directors of Health, held in Washington, D. C., September 27–29, 1926, a committee was appointed to formulate a program for the investigation of plague. This committee recommended that the Pan American Sanitary Bureau request each of the signatory powers to begin in one or more places, preferably ports, a survey of rats and rat fleas. Some of this work has already been begun and reports are being received, particularly from Ecuador. In the United States, rat-flea surveys are now being conducted in New York, Savannah, Ga., and Norfolk and Newport News, Va., as well as in San Juan, P. R.

COURT DECISIONS RELATING TO PUBLIC HEALTH

Compensation granted under workmen's compensation act for death from typhoid fever.—(California First District Court of Appeal, Division 1; Fidelity and Casualty Co. of New York *v.* Industrial Accident Commission of California et al., 258 P. 698; decided July 20, 1927.) An employee was sent by his employers from San Francisco to Valparaiso, Chile, to represent them at a conference, and was also instructed to visit various concerns in South America with whom his employers were interested in a business way. Pursuant to instructions the employee went to Valparaiso, stopping at several places en route, and, upon completing his duties there, visited several other places. Upon arrival at a certain place in Peru he was taken to a hospital where he later died from typhoid fever. It was shown that one of the employers at least was familiar with health conditions in Chile and Peru, and that through him the employee was warned of the danger of contracting the disease and advised as to the precautions to be taken to avoid it. The State industrial accident commission awarded compensation to the widow, holding that the

[1] The periods for which the figures are given coincide approximately with the months.

employee sustained an injury, arising out of and in the course of his employment, which was the proximate cause of his death. On appeal it was contended by the insurance carrier that the disease contracted by the deceased was due to a risk of the commonalty, and that, at the time the disease was contracted, the deceased was not performing a service for his employers. The district court of appeal in affirming the award said:

* * * It further appears that the disease, while not epidemic in the places visited, was prevalent there and, owing to sanitary conditions, a constant source of danger. It is clear from the testimony that the employers were aware of the danger and that the employee, during the period which elapsed between the arrival at Valparaiso and the date he reached Arequipa, was engaged in performing the duties of his employment, and the evidence reasonably supports the conclusion that the disease was contracted during that period.

* * * * * * *

In the instant case * * * it appears that the employers were aware of the prevalence of the disease contracted by the employee in the localities which he was directed to visit. Furthermore, the evidence sufficiently shows that the inhabitants of these localities, while not immune from the disease, were less subject to infection therefrom than foreigners, and we are unable to say that the conclusion of the commission that the employee was subjected to an exposure in excess of that of the commonalty was not reasonably supported.

Act authorizing establishment of sewer districts held unconstitutional.—(Missouri Supreme Court; Rose et al. *v.* Smiley et al., County Judges, 296 S. W. 815; decided June 27, 1927.) A 1921 Missouri law authorized the establishment of sewer districts "in any county * * * now having or which may hereafter have a population of more than 100,000 inhabitants and less than 200,000 inhabitants, and which county now or hereafter adjoins a city which now contains or may hereafter contain a population of 500,000 or more."

The State constitution contained the following provision:

In all other cases where a general law can be made applicable, no local or special law shall be enacted.

The city of St. Louis was not located in any county and was the only city in the State so situated, all other cities being within the borders of some county.

The supreme court held the said act to be unconstitutional, stating as follows:

The act was intended to apply to no other county than St. Louis County. The words, "or hereafter contain," were thrown in to give the act a general appearance, when in facts [sic] its purpose and effect were strictly local. As pointed out in the Armstrong case, there are, no doubt, many counties which, in point of population and in congested areas, are as much in need of sanitary sewers as St. Louis County. A general law could be passed, with a classification based upon population, which would apply to many other counties, and therefore the act is contrary to the clause of the constitution mentioned.

DEATHS DURING WEEK ENDED SEPTEMBER 24, 1927

Summary of information received by telegraph from industrial insurance companies for week ended September 24, 1927, and corresponding week of 1926. (From the Weekly Health Index, September 28, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Sept. 24, 1927	Corresponding week 1926
Policies in force	68,442,942	65,375,826
Number of death claims	11,963	11,028
Death claims per 1,000 policies in force, annual rate	9.1	8.8

Deaths from all causes in certain large cities of the United States during the week ended September 24, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, September 28, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Sept. 24, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Sept. 24, 1927[2]
	Total deaths	Death rate[1]		Week ended Sept. 24, 1927	Corresponding week 1926	
Total (68 cities)	6,072	10.7	[3] 11.3	675	[3] 842	[4] 53
Akron	22			5	9	54
Albany[5]	33	14.3	11.8	3	3	63
Atlanta	66			8	8	
White	28			3	5	
Colored	38	(6)		5	3	
Baltimore[5]	193	12.3	13.6	25	31	77
White	153		11.8	19	22	73
Colored	40	(6)	23.7	6	9	93
Birmingham	74	17.9	12.1	11	5	
White	40		11.8	7	4	
Colored	34	(6)	12.6	4	1	
Boston	195	12.8	15.8	35	45	98
Bridgeport	27			5	2	93
Buffalo	124	11.8	11.7	9	18	38
Cambridge	23	9.7	12.8	0	5	0
Camden	28	11.0	12.3	7	3	120
Canton	21	9.7	8.5	3	3	71
Chicago[5]	576	9.7	10.6	56	78	48
Cincinnati	106	13.4	15.2	14	20	87
Cleveland	143	7.6	10.2	15	23	40
Columbus	64	11.5	14.3	9	15	84
Dallas	40	10.0	17.2	5	21	
White	33		18.1	4	21	
Colored	7	(6)	11.6	1	0	
Dayton	36	10.4	11.2	4	8	66
Denver	66	11.9	11.3	14	8	
Des Moines	27	9.4	10.4	1	3	17
Detroit	209	8.2	11.2	29	39	46
Duluth	23	10.4	12.0	4	3	86
El Paso	25	11.4	10.5	3	4	
Erie	15			0	2	0
Fall River[5]	22	8.6	10.7	3	1	53
Flint	35	12.8	7.7	8	5	131
Fort Worth	25	7.9	12.1	2	4	
White	17		10.4	1	3	
Colored	8	(6)	24.7	1	1	
Grand Rapids	23	7.5	9.7	1	4	15
Houston	51			8	13	
White	31			6	4	
Colored	20	(6)		2	9	
Indianapolis	96	13.4	12.8	8	5	63
White	76		11.6	5	5	45
Colored	20	(6)	21.3	3	0	183

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 67 cities.
[4] Data for 63 cities.
[5] Deaths for week ended Friday, Sept. 23, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

***Deaths from all causes in certain large cities of the United States during the week ended September 24, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926*—Continued**

City	Week ended Sept. 24, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Sept. 24, 1927
	Total deaths	Death rate		Week ended Sept. 24, 1927	Corresponding week 1926	
Jersey City	42	6.8	11 0	6	5	45
Kansas City, Kans	15	6.7	14 7	2	5	39
White	8	-	11.3	2	3	45
Colored	7	(6)	30.5	0	2	0
Kansas City, Mo	82	11.2	11.7	10	15	-
Knoxville	21	10.7	-	2	-	-
White	19	-	-	2	-	-
Colored	2	(6)	-	0	-	-
Los Angeles	221	-	-	25	15	72
Louisville	65	10.6	12.2	2	10	17
White	51	-	10.7	2	9	19
Colored	14	(6)	21.1	0	1	0
Lowell	31	14.7	14.7	7	6	135
Lynn	14	7.0	9 5	1	2	26
Memphis	54	15 7	17.1	3	9	-
White	37	-	12 3	1	7	-
Colored	17	(6)	25 7	2	2	-
Milwaukee	66	6 5	9 0	10	10	47
Minneapolis	67	7.9	10 6	5	8	28
Nashville [5]	32	12.1	14.8	2	3	-
White	20	-	14 4	1	3	-
Colored	12	(6)	16 0	1	0	-
New Bedford	17	7.4	11.8	0	5	0
New Haven	37	10.4	16.0	4	5	56
New Orleans	143	17.6	13.1	21	17	-
White	94	-	9.1	12	9	-
Colored	49	(6)	24.4	9	8	-
New York	1,117	9.8	10.6	112	159	46
Bronx Borough	133	7.5	7.9	13	14	41
Brooklyn Borough	371	8.5	9.0	39	53	40
Manhattan Borough	476	13 7	14.3	47	74	55
Queens Borough	100	6.4	8.7	12	12	51
Richmond Borough	37	13.1	13.1	1	6	19
Newark, N. J	72	8 1	9.4	6	14	30
Oakland	53	10.4	8.2	4	2	47
Oklahoma City	32	-	-	1	2	-
Omaha	41	9.8	8.7	2	3	22
Paterson	22	8 0	9.5	4	6	71
Philadelphia	396	10 1	11.0	53	49	71
Pittsburgh	132	10 7	13.2	16	20	56
Portland, Oreg	56	-	-	2	4	21
Providence	54	10.0	9.1	4	5	34
Richmond	36	9.8	11.6	1	7	13
White	19	-	9.3	0	3	0
Colored	17	(6)	17.1	1	4	38
Rochester	59	9.5	8.4	6	9	50
St. Louis	409	25.4	11.7	41	25	-
St. Paul	45	9.4	13.2	4	3	18
Salt Lake City [5]	27	10.4	12.9	4	3	61
San Antonio	38	9.4	10.4	8	10	-
San Diego	47	21.3	12.8	5	2	106
San Francisco	145	13.1	11.6	6	6	37
Schenectady	18	10.1	9.5	2	1	60
Seattle	66	-	-	3	9	31
Somerville	22	11.2	8.9	2	2	72
Spokane	22	10.5	12.0	2	3	50
Springfield, Mass	33	11.7	12.6	5	6	77
Syracuse	39	10.3	9.6	2	3	26
Tacoma	16	7.8	9.8	0	0	0
Toledo	62	10.6	13.4	8	20	77
Trenton	28	10.7	11.7	4	3	70
Utica	29	14.7	13.7	3	2	68
Washington, D. C	102	9.8	11.5	13	12	75
White	57	-	10.3	4	8	34
Colored	45	(6)	14.8	9	4	105
Waterbury	20	-	-	1	1	24
Wilmington, Del	27	11.2	9.3	3	3	74
Worcester	49	13.1	12.7	6	6	72
Yonkers	15	6.6	7.6	2	1	45
Youngstown	24	7.4	7.0	5	3	70

[5] Deaths for week ended Friday, Sept. 23, 1927.

[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

DEATHS DURING WEEK ENDED OCTOBER 1, 1927

Summary of information received by telegraph from industrial insurance companies for week ended October 1, 1927, and corresponding week of 1926. (From the Weekly Health Index, October 5, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Oct. 1, 1927	Corresponding week 1926
Policies in force	68, 508, 967	65, 439, 019
Number of death claims	10, 910	11, 069
Death claims per 1,000 policies in force, annual rate	8. 3	8. 8

Deaths from all causes in certain large cities of the United States during the week ended October 1, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, October 5, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Oct. 1, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Oct. 1, 1927 [2]
	Total deaths	Death rate [1]		Week ended Oct. 1, 1927	Corresponding week 1926	
Total (67 cities)	6, 129	10. 8	[3] 11. 0	730	[3] 840	[4] 61
Akron	37			7	10	75
Albany [5]	39	16. 9	11. 0	6	3	125
Atlanta	68			5	13	
White	35			4	8	
Colored	33	([6])		1	5	
Baltimore [5]	209	13. 3	12. 6	22	35	68
White	149		10. 6	14	25	54
Colored	60	([6])	24. 1	8	10	124
Birmingham	63	15. 3	14. 3	9	14	
White	29		9. 8	6	4	
Colored	34	([6])	21. 4	3	10	
Boston	182	12. 0	11. 7	27	28	75
Bridgeport	26			3	4	56
Buffalo	136	12. 9	13. 7	22	20	93
Cambridge	25	10. 5	6. 8	2	1	36
Camden	33	12. 9	10. 3	5	9	86
Canton	29	13. 4	6. 6	3	2	71
Chicago [5]	589	9. 9	10. 0	80	75	69
Cincinnati	110	13. 9	12. 7	10	8	62
Cleveland	147	7. 8	9. 2	23	28	61
Columbus	68	12. 2	13. 7	7	19	65
Dallas	40	10. 0	10. 5	4	16	
White	32		10. 1	3	15	
Colored	8	([6])	13. 5	1	1	
Dayton	39	11. 3	14. 1	5	7	82
Denver	65	11. 7	14. 1	6	7	
Des Moines	30	10. 5	10. 0	1	1	17
Detroit	235	9. 2	10. 9	36	50	57
Duluth	24	10. 9	8. 8	1	2	22
El Paso	29	13. 3	9. 1	6	2	
Erie	18			0	7	0
Fall River [5]	23	9. 0	11. 9	1	6	18
Flint	33	12. 0	8. 1	10	6	163
Fort Worth	33	10. 5	7. 2	4	4	
White	26		6. 7	4	4	
Colored	7	([6])	11. 0	0	0	
Grand Rapids	26	8. 5	9. 4	5	3	73
Houston	56			5	9	
White	30			4	6	
Colored	26	([6])		1	3	
Indianapolis	94	13. 1	11. 8	10	10	78
White	74		12. 1	6	10	54
Colored	20	([6])	9. 5	4	0	244

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 66 cities.
[4] Data for 61 cities.
[5] Deaths for week ended Friday, Sept. 30, 1927.
[6] In the cities in which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

Deaths from all causes in certain large cities of the United States during the week ended October 1, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926—Continued

City	Week ended Oct. 1, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Oct. 1, 1927
	Total deaths	Death rate		Week ended Oct. 1, 1927	Corresponding week 1926	
Jersey City	60	9.7	9.8	12	10	90
Kansas City, Kans	25	11.1	14.3	2	5	39
White	21		11.9	2	4	45
Colored	4	(6)	25.4	0	1	0
Kansas City, Mo	79	10.8	11.7	9	21	
Knoxville	23	11.8		5		
White	22			5		
Colored	1	(6)		0		
Los Angeles	243			27	12	77
Louisville	58	9.5	13.7	8	9	68
White	38		13.6	8	7	78
Colored	20	(6)	14.4	0	2	0
Lowell	19	9.0	16.1	2	3	39
Lynn	23	11.4	6.5	0	2	0
Memphis	42	12.2	15.3	2	8	
White	24		11.4	1	6	
Colored	18	(6)	22.3	1	2	
Milwaukee	165	10.3	8.6	19	21	89
Minneapolis	56	6.6	10.6	3	9	17
Nashville [5]	42	15.9	18.6	2	6	
White	22		13.8	0	5	
Colored	20	(6)	30.7	2	1	
New Bedford	17	7.4	7.9	2	8	35
New Haven	32	9.0	10.9	4	2	56
New Orleans	152	18.7	16.6	18	18	
White	87		12.4	9	7	
Colored	65	(6)	28.2	9	11	
New York	1,147	10.0	10.1	112	149	46
Bronx Borough	137	7.7	8.5	7	19	22
Brooklyn Borough	387	8.9	9.2	43	57	44
Manhattan Borough	480	13.8	13.5	52	61	61
Queens Borough	111	7.2	5.6	8	9	34
Richmond Borough	32	11.4	13.5	2	3	37
Newark, N. J	87	9.7	9.4	13	9	64
Oakland	65	12.7	11.0	6	3	70
Oklahoma City	22			3	1	
Omaha	49	11.7	13.3	3	6	33
Paterson	22	8.0	11.3	0	7	0
Philadelphia	405	10.4	11.0	43	53	57
Pittsburgh	145	11.8	11.1	32	17	112
Portland, Oreg	67			4	5	42
Providence	58	10.8	11.9	6	13	51
Richmond	45	12.2	13.2	5	8	66
White	22		11.3	2	5	40
Colored	23	(6)	18.0	3	3	114
Rochester	62	10.0	13.0	3	8	25
St. Louis	245	15.2	11.9	21	20	
St. Paul	54	11.3	8.4	5	5	45
Salt Lake City [5]	24	9.2	11.4	6	4	91
San Antonio	38	9.4	8.4	8	3	
San Diego	33	15.0	15.2	4	2	85
San Francisco	106	9.6	11.6	7	4	44
Schenectady	12	6.7	9.0	1	1	30
Somerville	18	9.2	8.9	3	0	108
Spokane	25	12.4	12.4	2	1	50
Springfield, Mass	26	9.2	7.9	7	0	108
Syracuse	42	11.1	12.7	6	3	77
Tacoma	21	10.2	11.3	2	1	47
Toledo	56	9.6	14.3	3	10	29
Trenton	34	12.9	14.0	6	4	104
Washington, D. C	144	13.9	12.1	16	24	93
White	92		10.4	11	12	93
Colored	52	(6)	17.2	5	12	92
Waterbury	18			3	1	71
Wilmington, Del	29	12.0	7.6	2	3	50
Worcester	49	13.1	12.2	6	2	72
Yonkers	19	8.3	7.2	2	1	45
Youngstown	34	10.5	10.4	7	6	98

[5] Deaths for week ended Friday Sept. 30, 1927.

[6] In the cities in which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended October 8, 1927

DIPHTHERIA	Cases
Alabama	120
Arizona	4
Arkansas	11
California	102
Colorado	29
Connecticut	36
Delaware	1
Florida	20
Idaho	1
Illinois	109
Indiana	51
Iowa [1]	18
Kansas	54
Louisiana	42
Maryland [1]	35
Massachusetts	92
Michigan	76
Minnesota	41
Mississippi	54
Missouri	61
Montana	1
Nebraska	15
New Jersey	127
New Mexico	7
New York	211
North Carolina	184
Oklahoma [2]	97
Oregon	8
Pennsylvania	180
Rhode Island	5
South Carolina	89
South Dakota	7
Tennessee	64
Texas	55
Utah [1]	6
Washington	9
West Virginia	20
Wisconsin	23
Wyoming	1

[1] Week ended Friday.
[2] Exclusive of Oklahoma City and Tulsa.

INFLUENZA	Cases
Alabama	13
Arkansas	27
California	23
Colorado	4
Connecticut	2
Illinois	12
Indiana	7
Kansas	4
Louisiana	3
Maine	1
Maryland [1]	3
Massachusetts	5
Minnesota	3
Missouri	6
New Jersey	8
New York	6
Oklahoma [2]	41
Oregon	8
South Carolina	243
South Dakota	1
Tennessee	32
Texas	26
West Virginia	2
Wisconsin	45
MEASLES	
Alabama	15
Arizona	7
Arkansas	6
California	44
Colorado	2
Connecticut	14
Delaware	5
Illinois	18
Indiana	12
Kansas	36
Louisiana	7
Maine	37
Maryland [1]	7
Massachusetts	94
Michigan	9

[1] Week ended Friday.
[2] Exclusive of Oklahoma City and Tulsa.

MEASLES—continued

	Cases
Minnesota	2
Missouri	4
Montana	4
Nebraska	1
New Jersey	14
New Mexico	47
New York	71
North Carolina	113
Oklahoma [2]	11
Oregon	8
Pennsylvania	86
Rhode Island	1
South Carolina	52
South Dakota	13
Tennessee	41
Texas	2
Vermont	1
Washington	38
West Virginia	1
Wisconsin	84
Wyoming	18

MENINGOCOCCUS MENINGITIS

Alabama	1
California	8
Colorado	2
Connecticut	2
Idaho	1
Illinois	3
Iowa [1]	1
Kansas	2
Maryland [1]	1
Massachusetts	1
Michigan	1
Minnesota	2
Missouri	1
Montana	1
Nebraska	1
New Jersey	1
North Carolina	1
Oklahoma [2]	1
Oregon	1
Rhode Island	1
Tennessee	1
Washington	4
Wisconsin	7

POLIOMYELITIS

Arizona	5
Arkansas	1
California	36
Colorado	4
Connecticut	13
Florida	1
Idaho	1
Illinois	40
Indiana	9
Iowa [1]	12
Kansas	15
Maine	13
Maryland [1]	1
Massachusetts	115
Michigan	30
Minnesota	12
Mississippi	2

[1] Week ended Friday.
[2] Exclusive of Oklahoma City and Tulsa.

POLIOMYELITIS—continued

	Cases
Missouri	18
Montana	2
Nebraska	10
New Jersey	14
New Mexico	13
New York	59
North Carolina	1
Ohio	76
Oklahoma [2]	10
Oregon	18
Pennsylvania	29
Rhode Island	8
South Carolina	2
South Dakota	8
Tennessee	3
Texas	15
Utah [1]	4
Vermont	4
Virginia	1
Washington	15
West Virginia	17
Wisconsin	12
Wyoming	1

SCARLET FEVER

Alabama	32
Arizona	2
Arkansas	12
California	99
Colorado	27
Connecticut	21
Delaware	1
Florida	14
Idaho	3
Illinois	146
Indiana	83
Iowa [1]	30
Kansas	79
Louisiana	10
Maine	23
Maryland [1]	37
Massachusetts	142
Michigan	89
Minnesota	56
Mississippi	25
Missouri	58
Montana	13
Nebraska	20
New Jersey	48
New Mexico	2
New York	131
North Carolina	147
Oklahoma [2]	30
Oregon	12
Pennsylvania	195
Rhode Island	13
South Carolina	29
South Dakota	34
Tennessee	46
Texas	46
Utah [1]	2
Vermont	4
Washington	20
West Virginia	77
Wisconsin	45
Wyoming	8

[1] Week ended Friday.
[2] Exclusive of Oklahoma City and Tulsa.

SMALLPOX	Cases
Alabama	1
Arkansas	3
California	4
Florida	1
Idaho	6
Illinois	10
Indiana	7
Iowa [1]	12
Kansas	3
Louisiana	3
Michigan	9
Mississippi	6
Missouri	1
Montana	23
New York	7
North Carolina	10
Oklahoma [2]	10
Oregon	10
Rhode Island	1
South Carolina	5
South Dakota	3
Tennessee	1
Texas	4
Utah [1]	5
Washington	12
West Virginia	10
Wisconsin	8

TYPHOID FEVER	Cases
Alabama	38
Arizona	8
Arkansas	48
California	8
Colorado	16
Connecticut	3

[1] Week ended Friday

[2] Exclusive of Oklahoma City and Tulsa.

TYPHOID FEVER—continued	Cases
Delaware	2
Florida	5
Idaho	1
Illinois	39
Indiana	29
Iowa [1]	3
Kansas	31
Louisiana	26
Maine	4
Maryland [1]	27
Massachusetts	16
Michigan	14
Minnesota	7
Mississippi	19
Missouri	21
Montana	10
Nebraska	1
New Jersey	6
New Mexico	6
New York	48
North Carolina	28
Oklahoma [2]	90
Oregon	4
Pennsylvania	38
Rhode Island	2
South Carolina	49
South Dakota	3
Tennessee	81
Texas	48
Utah [1]	2
Vermont	1
Washington	5
West Virginia	39
Wisconsin	19
Wyoming	1

[1] Week ended Friday.

[2] Exclusive of Oklahoma City and Tulsa.

Reports for Week Ended October 1, 1927

DIPHTHERIA	Cases
District of Columbia	16
North Dakota	11
MEASLES	
District of Columbia	2
North Dakota	21
POLIOMYELITIS	
District of Columbia	3
North Dakota	4

SCARLET FEVER	Cases
District of Columbia	10
North Dakota	47
TYPHOID FEVER	
District of Columbia	3
North Dakota	3

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week.

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
July, 1927										
Delaware	0	4		2	11		0	8	0	3
August, 1927										
California	16	387	21	8	239	4	313	243	29	93
Kansas	7	36	5	2	81		31	189	9	99
September, 1927										
Arizona	4	4			5		12	1	0	29
Nebraska	0	14	1		4		20	60	9	18

July, 1927

Delaware:	Cases
Chicken pox	2
Mumps	5
Tetanus	1
Whooping cough	6

August, 1927

	Cases
Chicken pox:	
California	207
Kansas	24
Dysentery:	
California (amebic)	3
California (bacillary)	24
Kansas	1
German measles:	
California	40
Kansas	3
Hookworm disease:	
California	1
Lethargic encephalitis.	
California	8
Kansas	1
Mumps:	
California	137
Kansas	19
Paratyphoid fever:	
California	5
Rabies in animals:	
California	18
Rocky Mountain spotted or tick fever:	
California	1
Scabies:	
Kansas	1

August 1927—Continued

	Cases
Tetanus:	
California	8
Trachoma:	
California	3
Kansas	3
Vincent's angina:	
Kansas	1
Whooping cough:	
California	679
Kansas	246

September, 1927

Chicken pox:	
Airzona	4
Nebraska	10
Dysentery:	
Arizona (amebic)	1
German measles:	
Nebraska	2
Lethargic encephalitis.	
Nebraska	2
Mumps	
Arizona	4
Nebraska	14
Paratyphoid fever:	
Arizona	1
Septic sore throat:	
Nebraska	2
Whooping cough:	
Arizona	9
Nebraska	10

Number of Cases of Certain Communicable Diseases Reported for the Month of July, 1927, by State Health Officers

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Small-pox	Tuberculosis	Typhoid fever	Whooping cough
Alabama	15	71	228	33	36	66	460	414	206
Arizona	8	6	318	13	13	1	81	10	2
Arkansas	52	8	124	74	9	11	[1] 61	111	137
California	367	287	581	152	248	43	787	80	602
Colorado	67	63	152	19	152	19	123	26	74
Connecticut	157	77	131	59	85	0	211	9	113
Delaware	2	4	11	5	8	0	13	3	6
District of Columbia	17	46	14	...	33	14	100	11	48
Florida	3	21	64	8	14	24	56	59	41
Georgia	8	44	102	34	37	85	87	399	118
Idaho	11	4	72	13	20	38	7	6	17
Illinois	422	377	562	526	397	67	1,040	141	1,224
Indiana	68	89	149	26	142	284	164	41	247
Iowa	39	62	74	19	73	87	77	14	96
Kansas	46	35	205	50	102	41	160	59	403
Kentucky [2]	...	...	...	...	...	...	...	...	...
Louisiana	1	52	154	7	18	13	[1] 170	146	41
Maine	44	13	163	10	88	0	34	6	148
Maryland	123	150	56	34	87	0	284	64	278
Massachusetts	423	264	1,023	338	643	0	544	34	360
Michigan	380	251	398	187	435	94	489	50	675
Minnesota	321	90	104	...	286	12	232	16	76
Mississippi	155	43	468	253	30	18	320	321	1,122
Missouri	36	92	171	188	120	61	278	84	348
Montana	23	7	25	3	47	11	48	17	59
Nebraska	30	20	107	70	53	45	9	11	62
Nevada [3]	...	...	...	...	...	...	...	...	...
New Hampshire	...	11	...	...	20	...	...	1	...
New Jersey	404	304	82	...	208	0	427	45	593
New Mexico [4]	...	...	...	...	...	...	...	...	...
New York	1,246	1,142	1,383	842	766	28	1,611	107	1,342
North Carolina	58	62	1,481	...	71	46	...	331	1,432
North Dakota	17	9	31	3	83	13	9	1	15
Ohio	402	291	166	330	373	95	850	85	643
Oklahoma [5]	21	32	236	10	59	98	99	372	75
Oregon	50	41	274	23	33	55	58	23	58
Pennsylvania	934	703	1,316	733	855	11	881	157	1,033
Rhode Island	17	29	6	8	52	0	43	4	15
South Carolina	64	94	535	...	34	35	193	542	530
South Dakota	14	18	41	15	58	34	9	2	52
Tennessee	28	54	85	22	77	55	279	950	246
Texas [2]	...	...	...	...	...	...	...	...	...
Utah [3]	...	...	...	...	...	...	...	...	...
Vermont	67	4	158	52	15	0	17	3	84
Virginia	118	76	363	...	73	27	[1] 220	272	966
Washington	125	65	677	71	80	125	162	25	107
West Virginia	45	50	214	...	128	116	102	89	151
Wisconsin	397	142	1,170	343	290	83	234	15	508
Wyoming	9	2	40	...	27	15	1	1	34

[1] Pulmonary.
[2] Reports received weekly.
[3] Reports received annually.
[4] Report not received at time of going to press.
[5] Exclusive of Oklahoma City and Tulsa.

Case Rates per 1,000 Population (Annual Basis) for the Month of July, 1927

State	Chicken pox	Diph-theria	Measles	Mumps	Scarlet fever	Small-pox	Tuber-culosis	Typhoid fever	Whoop-ing cough
Alabama	0.07	0.33	1.05	0.15	0.17	0.30	2.12	1.91	0.95
Arizona	.21	.15	8.16	.33	.33	.03	2.08	.26	.05
Arkansas	.32	.05	.76	.45	.06	.07	[1] .37	.68	.84
California	.97	.76	1 54	.40	.66	.11	2 09	.21	1.60
Colorado	.73	.69	1 67	.21	1.67	.21	1 35	.29	.81
Connecticut	1.13	.55	.94	.42	.61	.00	1 52	.06	.81
Delaware	.10	.19	.53	.24	.39	.00	63	.15	.29
District of Columbia	.37	1.00	.31	--------	.72	.31	2 18	.24	1.05
Florida	.03	.18	.55	.07	.12	.21	.48	.51	35
Georgia	.03	.16	.38	.13	.14	.32	.32	1.48	.44
Idaho	.24	.09	1 59	.29	.44	.84	.15	.13	.37
Illinois	.68	.61	.91	.85	.64	.11	1.68	.23	1.98
Indiana	.25	.33	.56	.10	.53	1 06	.61	.15	.92
Iowa	.19	.30	.36	.09	.35	.42	.37	.07	.47
Kansas	.30	.23	1.32	.32	.66	.26	1.03	.38	2.60
Kentucky [2]	--------	--------	--------	--------	--------	--------	--------	--------	--------
Louisiana	.01	.32	.94	.04	.11	.08	[1] 1 03	.89	25
Maine	65	.19	2.42	.15	1.31	.00	.50	.09	2 20
Maryland	.91	1.11	.41	.25	.64	.00	2.09	.47	2 05
Massachusetts	1 17	.73	2 84	.94	1.78	.00	1.51	.09	1.00
Michigan	1.00	.66	1.04	.49	1.14	.25	1.28	.13	1.77
Minnesota	1.41	.39	.46	--------	1.25	.05	1.02	.07	.33
Mississippi	1 02	.28	3 08	1 66	.20	.12	2.10	2.11	7.38
Missouri	.12	.31	.57	.63	.40	.20	.93	.28	1.17
Montana	.38	.12	.41	.05	.78	.18	.79	.28	.97
Nebraska	.25	.17	.90	.59	.45	.38	.08	.09	.52
Nevada [3]	--------	--------	--------	--------	--------	--------	--------	--------	--------
New Hampshire	--------	.28	--------	--------	.52	--------	--------	.03	--------
New Jersey	1.27	.95	.26	--------	.84	.00	1.34	.14	1.86
New Mexico [4]	--------	--------	--------	--------	--------	--------	--------	--------	--------
New York	1 28	1.18	1 43	.87	.79	.03	1 66	.11	1.38
North Carolina	.24	.25	6 02	--------	.29	.19	--------	1.35	5.82
North Dakota	.31	.17	.57	.06	1.52	.24	.17	.02	.28
Ohio	.71	.51	.29	.58	.65	.17	1 49	.15	1.13
Oklahoma [5]	.12	.18	1.31	06	.33	.54	.55	2.06	.42
Oregon	.66	.54	3.62	.30	.44	.73	.77	.30	.77
Pennsylvania	1.13	.85	1.59	.89	1.03	.01	1.07	.19	1.25
Rhode Island	.28	.49	.10	.13	.87	.00	.72	.07	.25
South Carolina	.41	.60	3.41	--------	.22	22	1.23	3.46	3.38
South Dakota	.24	.30	.69	.25	.98	.58	.15	.03	.88
Tennessee	.13	.26	.40	.10	.36	.26	1.32	4.50	1.17
Texas [2]	--------	--------	--------	--------	--------	--------	--------	--------	--------
Utah [3]	--------	--------	--------	--------	--------	--------	--------	--------	--------
Vermont	2.24	.13	5.28	1.74	.50	.00	.57	.10	2.81
Virginia	.55	.35	1.68	--------	.34	.12	[1] 1.02	1.26	4.47
Washington	.94	.49	5.10	.54	.60	.94	1 22	.19	.81
West Virginia	.31	.35	1 49	--------	.89	81	.71	.62	1.05
Wisconsin	1.60	.57	4.72	1.38	1 17	.33	.94	.06	2.05
Wyoming	.44	.10	1.95	--------	1.32	.73	.05	.05	1.66

[1] Pulmonary.
[2] Reports received weekly.
[3] Reports received annually.
[4] Report not received at time of going to press.
[5] Exclusive of Oklahoma City and Tulsa.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 98 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,700,000. The estimated population of the 92 cities reporting deaths is more tnan 30,040,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended September 24, 1927, and September 25, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
43 States	1,525	1,444	
98 cities	607	616	719
Measles:			
42 States	593	937	
98 cities	161	219	
Poliomyelitis:			
43 States	584	126	
Scarlet fever:			
43 States	1,329	1,391	
98 cities	395	459	423
Smallpox:			
43 States	167	122	
98 cities	34	14	22
Typhoid fever:			
43 States	1,041	1,553	
98 cities	165	256	210
Deaths reported			
Influenza and pneumonia:			
92 cities	354	402	
Smallpox:			
92 cities	0	0	

City reports for week ended September 24, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	0	1	0	0	0	0	0	0
New Hampshire:									
Concord	22,546	0	0	0	0	0	1	0	0
Manchester	83,097	0	3	1	0	0	0	0	1
Vermont:									
Barre	10,008	0	0	0	0	0	0	0	0
Burlington	24,089	0	0	0	0	0	0	5	0
Massachusetts:									
Boston	779,620	6	29	17	2	0	14	2	18
Fall River	128,993	1	3	1	0	0	0	2	0
Springfield	142,065	0	2	9	0	0	0	3	0
Worcester	190,757	3	4	1	0	0	1	8	2
Rhode Island:									
Pawtucket	69,760	0	1	0	0	0	0	0	2
Providence	267,918	0	4	5	0	0	0	0	8
Connecticut:									
Bridgeport	(1)	0	6	4	0	0	0	0	1
Hartford	160,197	0	4	0	0	0	0	0	2
New Haven	178,927	0	2	2	0	0	1	4	2

[1] No estimate made.

City reports for week ended September 24, 1927—Continued

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	7	14	14	--------	0	3	3	10
New York	5,873,356	13	92	107	12	4	10	8	74
Rochester	316,786	0	5	3	--------	0	2	1	3
Syracuse	182,003	0	6	1	--------	0	2	0	1
New Jersey:									
Camden	128,642	0	3	3	0	0	0	0	0
Newark	452,513	6	7	10	2	0	2	9	10
Trenton	132,020	0	3	2	0	0	1	0	0
Pennsylvania:									
Philadelphia	1,979,364	7	41	32	--------	1	5	13	20
Pittsburgh	631,563	5	17	21	--------	0	34	1	13
Reading	112,707	0	2	1	--------	0	1	1	1
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	2	9	3	0	0	0	0	6
Cleveland	936,485	11	29	47	3	0	5	20	8
Columbus	279,836	5	5	4	0	0	0	0	2
Toledo	287,380	1	11	0	0	0	2	1	1
Indiana:									
Fort Wayne	97,846	--------	2	--------	--------	--------	--------	--------	--------
Indianapolis	358,819	3	9	4	0	0	1	5	7
South Bend	80,091	1	1	0	0	0	1	0	0
Terre Haute	71,071	0	0	0	0	0	0	0	1
Illinois:									
Chicago	2,995,239	16	61	51	1	0	5	8	21
Springfield	63,923	0	1	0	1	1	0	0	0
Michigan:									
Detroit	1,245,824	3	50	39	2	0	4	7	13
Flint	130,316	1	8	1	0	0	0	5	4
Grand Rapids	153,698	3	3	1	0	0	6	0	0
Wisconsin:									
Kenosha	50,891	2	1	0	0	0	0	0	0
Madison	46,385	--------	1	--------	--------	--------	--------	--------	--------
Milwaukee	509,192	13	11	5	0	0	5	5	2
Racine	67,707	3	1	0	0	0	0	1	0
Superior	39,671	2	1	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	0	1	0	0	0	0	0	0
Minneapolis	425,435	8	22	11	0	0	1	1	1
St. Paul	246,001	2	16	0	0	1	2	2	4
Iowa:									
Davenport	52,469	0	1	1	0	--------	0	0	--------
Des Moines	141,441	0	5	1	0	--------	0	0	2
Sioux City	76,411	1	2	0	0	--------	1	0	--------
Waterloo	36,771	0	1	1	0	--------	0	0	--------
Missouri:									
Kansas City	367,481	0	6	5	0	0	0	4	2
St. Joseph	78,342	0	1	0	0	0	0	0	0
St. Louis	821,543	2	28	8	0	0	1	5	--------
North Dakota:									
Fargo	26,403	0	0	0	0	0	0	2	2
South Dakota:									
Aberdeen	15,036	0	0	0	0	--------	0	0	--------
Sioux Falls	30,127	0	0	0	0	--------	0	0	--------
Nebraska:									
Lincoln	60,941	1	1	1	0	0	1	0	0
Omaha	211,768	1	14	0	0	0	1	1	2
Kansas:									
Topeka	55,411	0	1	13	0	0	1	0	1
Wichita	88,367	0	2	6	0	0	3	0	0
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	0	1	0	0	0	0	0	1
Maryland:									
Baltimore	796,296	6	17	18	2	3	5	1	16
Cumberland	33,741	0	0	0	0	0	0	0	0
Frederick	12,035	0	0	0	0	0	0	0	0
District of Columbia:									
Washington	497,906	3	7	10	0	0	2	0	5
Virginia:									
Lynchburg	30,395	0	1	4	0	0	0	0	0
Norfolk	(1)	3	2	2	0	0	0	0	2
Richmond	186,403	0	15	3	0	0	3	0	1
Roanoke	58,208	0	4	2	0	0	0	0	1

[1] No estimate made.

City reports for week ended September 24, 1927—**Continued**

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria: Cases, estimated expectancy	Diphtheria: Cases reported	Influenza: Cases reported	Influenza: Deaths reported	Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
SOUTH ATLANTIC—con.									
West Virginia:									
Charleston	49,019	0	2	1	0	0	0	0	0
Wheeling	56,208	2	1	0	0	0	3	0	0
North Carolina:									
Raleigh	30,371	0	4	4	0	0	1	0	0
Wilmington	37,061	-------	1	-------	-------	-------	-------	-------	-------
Winston-Salem	69,031	1	3	3	0	0	4	0	0
South Carolina:									
Charleston	73,125	0	0	1	18	0	0	0	0
Columbia	41,225	0	1	4	0	-------	0	0	3
Greenville	27,311	0	1	0	0	0	0	1	1
Georgia:									
Atlanta	(1)	0	7	4	6	2	1	1	6
Brunswick	16,809	0	0	0	0	0	0	3	0
Savannah	93,134	0	1	0	3	1	0	0	0
Florida.									
Miami	69,754	0	-------	0	0	0	1	1	0
St. Petersburg	26,847	-------	0	-------	-------	0	-------	-------	1
Tampa	94,743	0	1	2	0	0	1	0	2
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	1	0	0	0	0	0	0
Lexington	46,895	0	-------	0	0	0	0	0	0
Louisville	305,935	0	7	4	2	0	0	0	8
Tennessee.									
Memphis	174,533	0	5	1	0	0	3	0	4
Nashville	136,220	0	4	3	0	0	0	0	3
Alabama:									
Birmingham	205,670	1	6	5	0	1	0	2	1
Mobile	65,955	0	2	0	0	1	0	0	0
Montgomery	46,481	0	2	3	1	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	0	1	1	0	-------	0	0	-------
Little Rock	74,216	0	1	2	2	0	0	0	2
Louisiana:									
New Orleans	414,493	0	7	17	3	2	0	0	6
Shreveport	57,857	0	0	2	0	0	0	[illegible]	3
Oklahoma:									
Tulsa	124,478	0	-------	1	0	-------	0	1	-------
Texas·									
Dallas	194,450	0	6	16	0	0	0	0	0
Galveston	48,375	0	0	0	0	0	0	0	0
Houston	164,954	0	3	6	0	0	0	0	3
San Antonio	198,069	1	1	5	0	0	0	0	2
MOUNTAIN									
Montana:									
Billings	17,971	0	0	0	0	0	0	0	1
Great Falls	29,883	4	1	0	0	0	0	0	0
Helena	12,037	0	0	0	0	0	0	0	0
Missoula	12,668	0	0	0	0	0	1	0	0
Idaho:									
Boise	23,042	1	1	0	0	0	0	3	0
Colorado:									
Denver	280,911	5	14	20	-------	0	4	0	4
Pueblo	43,787	0	3	1	0	0	0	0	0
New Mexico:									
Albuquerque	21,000	0	1	0	0	0	0	0	0
Utah:									
Salt Lake City	130,948	9	4	5	0	0	0	2	1
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	(1)	12	5	1	0	-------	3	2	-------
Spokane	108,897	4	2	2	0	-------	0	0	-------
Tacoma	104,455	-------	3	-------	-------	-------	-------	-------	-------
Oregon:									
Portland	282,383	3	5	6	0	1	3	1	3
California:									
Los Angeles	(1)	5	28	16	4	0	7	1	12
Sacramento	72,260	1	2	0	0	0	0	0	1
San Francisco	557,530	8	15	7	0	0	9	11	4

[1] No estimate made.

City reports for week ended September 24, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
NEW ENGLAND											
Maine:											
Portland	0	0	0	0	0	0	1	3	0	6	17
New Hampshire:											
Concord	1	0	0	0	0	1	0	0	0	0	19
Manchester	1	1	0	0	0	0	0	0	0	0	9
Vermont:											
Barre	1	0	0	0	0	0	0	0	0	0	2
Burlington	1	1	0	0	0	0	0	0	0	0	3
Massachusetts:											
Boston	19	23	0	0	0	7	4	17	0	21	195
Fall River	1	6	0	0	0	3	2	1	0	0	20
Springfield	3	2	0	0	0	2	0	0	0	1	39
Worcester	3	11	0	0	0	1	0	0	0	3	42
Rhode Island:											
Pawtucket	1	0	0	0	0	1	0	0	0	0	13
Providence	2	6	0	0	0	2	0	2	0	7	54
Connecticut:											
Bridgeport	2	3	0	0	0	0	0	0	0	0	27
Hartford	2	1	0	0	0	1	1	1	0	11	27
New Haven	2	1	0	0	0	2	2	3	0	8	37
MIDDLE ATLANTIC											
New York:											
Buffalo	8	12	0	0	0	9	2	0	1	20	120
New York	40	41	0	0	0	[1] 88	43	31	7	123	1,123
Rochester	3	1	0	0	0	5	1	1	0	1	56
Syracuse	4	0	0	0	0	1	3	0	0	3	39
New Jersey:											
Camden	3	0	0	0	0	0	1	1	0	0	28
Newark	5	2	0	0	0	5	3	4	0	43	86
Trenton	0	0	0	0	0	2	1	1	0	4	28
Pennsylvania:											
Philadelphia	27	20	0	0	0	31	14	4	0	30	396
Pittsburgh	17	10	1	0	0	9	4	5	0	11	132
Reading	0	0	0	0	0	0	1	1	0	2	19
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	6	2	1	0	0	8	2	2	0	2	106
Cleveland	13	16	1	0	0	15	4	1	1	17	143
Columbus	4	5	0	0	0	1	1	0	0	2	64
Toledo	5	1	0	0	0	4	2	1	1	6	62
Indiana:											
Fort Wayne	1		0				1				
Indianapolis	4	10	1	2	0	0	3	1	0	3	96
South Bend	2	2	0	0	0	0	0	0	0	0	16
Terre Haute	1	1	0	0	0	0	1	0	0	0	21
Illinois:											
Chicago	39	20	0	0	0	47	8	7	0	146	576
Springfield	1	0	0	0	0	1	1	0	1	0	9
Michigan:											
Detroit	33	20	1	0	0	19	6	3	0	79	209
Flint	5	10	1	0	0	2	1	0	0	5	36
Grand Rapids	4	2	0	0	0	0	1	0	0	2	23
Wisconsin:											
Kenosha	1	0	0	0	0	0	0	1	1	5	12
Madison	1		0				0				
Milwaukee	14	9	0	0	0	2	1	0	0	26	66
Racine	2	3	0	0	0	0	0	0	0	11	9
Superior	1	3	1	0	0	1	0	0	0	0	3
WEST NORTH CENTRAL											
Minnesota:											
Duluth	4	3	1	0	0	4	1	0	0	4	23
Minneapolis	21	5	0	0	0	3	1	1	0	0	67
St. Paul	9	3	2	0	0	1	2	0	1	3	46
Iowa:											
Davenport	0	0	0	0			0	0		0	
Des Moines	4	2	0	0		1	0	0		2	30
Sioux City	1	0	0	0			0	0		2	
Waterloo	1	1	0	0			1	0		0	
Missouri:											
Kansas City	4	2	0	0	0	3	2	2	0	4	82
St. Joseph	2	0	0	4	0	1	1	0	0	0	18
St. Louis	13	4	0	0	0	10	6	3	0	18	194

[1] Pulmonary tuberculosis only.

City reports for week ended September 24, 1927—**Continued**

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
WEST NORTH CENTRAL—continued											
North Dakota:											
Fargo	0	6	0	0	0	0	0	0	0	0	7
South Dakota:											
Aberdeen	1	0	0	0			0	0		1	
Sioux Falls	1	1	0	0			1	1		0	4
Nebraska:											
Lincoln	0	0	0	0	0	0	0	0	0	0	13
Omaha	2	2	1	0	0	2	0	0	0	0	41
Kansas:											
Topeka	1	1	0	0	0	0	0	1	0	2	8
Wichita	2	3	0	0	0	0	2	0	1	3	25
SOUTH ATLANTIC											
Delaware:											
Wilmington	2	4	0	0	0	1	1	1	1	0	27
Maryland:											
Baltimore	7	19	0	0	0	11	11	2	0	38	193
Cumberland	0	1	0	0	0	0	1	0	0	0	8
Frederick	0	0	0	0	0	0	0	0	0	0	2
Dist. of Columbia:											
Washington	6	8	0	0	0	9	4	2	1	1	102
Virginia:											
Lynchburg	0	0	0	0	0	1	1	0	0	8	9
Norfolk	1	4	0	0	0	2	1	1	0	2	
Richmond	5	7	0	0	0	4	2	2	0	0	38
Roanoke	1	0	1	0	0	0	2	4	0	0	14
West Virginia:											
Charleston	2	3	0	0	0	1	2	2	0	0	9
Wheeling	3	1	0	0	0	1	1	0	0	0	12
North Carolina:											
Raleigh	1	0	0	0	0	4	0	0	0	0	20
Wilmington	2		0				0				
Winston-Salem	1	0	0	0	0	1	1	0	0	0	19
South Carolina:											
Charleston	0	1	0	0	0	0	2	5	1	4	20
Columbia	0	0	0	0		3	1	1		3	21
Greenville	0	0	1	0	0	0	1	1	0	0	5
Georgia:											
Atlanta	5	8	0	0	0	5	4	3	1	0	66
Brunswick	0	0	0	0	0	0	0	0	0	0	2
Savannah	1	1	0	0	0	2	0	0	0	1	24
Florida:											
Miami		0		0	0	2		1	0	2	12
St. Petersburg	0		0		0	0	0		0		6
Tampa	0	1	0	0	0	1	0	1	0	3	28
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0	0	0	0	0	0	0	0	0	1	
Lexington		0		0	0	0		1	0	0	12
Louisville	2	5	0	1	0	3	6	7	0	1	65
Tennessee:											
Memphis	2	4	0	0	0	6	5	4	1	0	54
Nashville	3	0	0	1	0	3	5	3	0	0	32
Alabama:											
Birmingham	4	0	1	0	0	4	5	3	0	3	74
Mobile	0	0	0	0	0	0	0	0	0	0	17
Montgomery	1	0	0	0	0	0	0	0	0	0	
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	0	0	0	0			0	1		0	
Little Rock	0	0	0	0	0	2	2	2	1	0	
Louisiana:											
New Orleans	2	4	0	0	0	19	4	8	0	1	143
Shreveport	0	0	0	0	0	1	1	0	0	0	36
Oklahoma:											
Tulsa		3		0				0		0	
Texas:											
Dallas	2	5	0	0	0	0	2	5	0	1	40
Galveston	0	1	0	0	0	1	1	0	0	0	9
Houston	0	2	0	0	0	4	0	0	0	0	51
San Antonio	1	0	0	0	0	4	1	1	0	0	38

City reports for week ended September 24, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
MOUNTAIN											
Montana:											
Billings	1	1	0	0	0	0	0	0	0	1	7
Great Falls	0	1	0	1	0	0	0	0	0	0	6
Helena	0	0	0	0	0	0	0	0	0	0	5
Missoula	1	0	1	0	0	0	0	0	0	0	6
Idaho:											
Boise	0	0	0	0	0	0	0	0	0	0	7
Colorado:											
Denver	5	10	2	0	0	8	3	0	0	3	66
Pueblo	1	2	0	1	0	1	2	0	0	0	8
New Mexico:											
Albuquerque	1	1	0	0	0	2	2	3	0	0	9
Utah:											
Salt Lake City	2	3	0	16	0	2	3	4	0	8	27
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	4
PACIFIC											
Washington.											
Seattle	7	2	0	0			0	2		3	
Spokane	4	1	1	4			1	0		1	
Tacoma	2		1				1				
Oregon·											
Portland	5	3	2	2	0	1	1	0	0	3	56
California											
Los Angeles	9	20	2	0	0	23	4	0	0	6	221
Sacramento	1	1	1	4	0	3	1	1	0	1	16
San Francisco	6	3	1	0	0	8	1	2	0	8	132

Division, State, and city	Meningococcus meningitis: Cases	Meningococcus meningitis: Deaths	Lethargic encephalitis: Cases	Lethargic encephalitis: Deaths	Pellagra: Cases	Pellagra: Deaths	Poliomyelitis (infantile paralysis): Cases, estimated expectancy	Poliomyelitis (infantile paralysis): Cases	Poliomyelitis (infantile paralysis): Deaths
NEW ENGLAND									
Maine:									
Portland	0	0	0	0	0	0	0	3	0
Massachusetts:									
Boston	0	0	0	0	0	0	2	27	0
Falls River	0	0	0	0	0	0	1	1	0
Springfield	0	0	0	0	0	0	1	1	0
Worcester	0	0	0	0	0	0	0	1	0
Rhode Island:									
Pawtucket	0	0	0	0	0	0	0	2	0
Providence	0	0	0	0	0	0	0	3	1
Connecticut:									
Bridgeport	1	0	0	0	0	0	0	1	0
New Haven	0	0	0	0	0	0	0	3	0
MIDDLE ATLANTIC									
New York:									
New York	4	2	5	3	0	0	13	37	5
Rochester	0	0	0	0	0	0	1	1	0
Syracuse	0	0	0	0	0	0	1	2	0
New Jersey:									
Newark	0	0	1	0	0	0	1	8	3
Trenton	0	0	0	0	0	0	0	1	0
Pennsylvania:									
Philadelphia	0	0	1	0	0	0	1	5	0
Pittsburgh	0	0	0	0	0	0	0	4	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	0	0	0	1	0	0	0	4	1
Cleveland	0	0	0	0	0	0	1	9	1
Columbus	0	0	0	0	0	0	0	3	0
Indiana:									
South Bend	0	0	0	0	0	0	1	1	0
Illinois:									
Chicago	2	0	0	0	0	0	4	14	3
Springfield	0	0	0	0	0	0	0	1	1
Michigan:									
Detroit	0	0	1	1	0	0	2	7	1
Flint	0	0	0	0	0	0	0	0	1

City reports for week ended September 24, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
EAST NORTH CENTRAL—continued									
Wisconsin:									
Kenosha	0	0	0	0	0	0	0	2	0
Milwaukee	3	2	0	0	0	0	1	2	0
Racine	0	0	0	0	0	0	0	2	0
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	4	0	0	0	0	0	0	1	0
St. Paul	0	0	0	0	0	0	0	1	0
Iowa:									
Des Moines	0	0	0	0	0	0	0	1	0
Sioux City	0	--------	0	--------	0	--------	0	1	--------
Waterloo	0	0	0	0	0	0	0	1	1
Missouri:									
Kansas City	0	0	0	0	0	0	0	5	2
St. Joseph	0	0	0	0	0	0	0	3	2
St. Louis	0	0	0	0	0	0	1	1	0
North Dakota:									
Fargo	0	0	0	0	0	0	0	2	0
South Dakota:									
Sioux Falls	0	--------	0	--------	0	--------	0	2	--------
Nebraska:									
Omaha	0	0	0	0	0	0	0	1	1
Kansas:									
Topeka	0	0	0	0	1	0	1	1	0
SOUTH ATLANTIC									
Virginia:									
Lynchburg	0	0	0	0	0	1	0	0	0
West Virginia:									
Wheeling	0	0	1	0	0	0	0	1	0
North Carolina:									
Winston-Salem	0	0	0	0	1	1	0	0	0
South Carolina: [1]									
Columbia	0	0	0	0	0	1	0	0	0
Greenville	0	0	0	0	0	1	0	0	0
Georgia: [2]									
Savannah [1] [2]	0	0	0	0	0	1	0	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Lexington	0	0	0	0	0	0	--------	1	0
Louisville	0	0	0	0	0	0	0	2	0
Tennessee:									
Nashville	0	0	0	0	1	0	0	1	2
Alabama:									
Birmingham	0	0	0	0	2	2	0	0	0
Mobile	0	0	0	0	0	1	0	0	0
Montgomery	0	0	0	0	1	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	2	0	0	0
Louisiana:									
New Orleans	0	0	0	0	3	0	1	0	0
Shreveport	1	0	0	0	0	0	0	0	0
Texas:									
Dallas	0	0	0	0	0	0	1	2	1
Houston	0	0	0	0	0	1	0	0	0
MOUNTAIN									
Colorado:									
Denver	0	0	0	0	0	0	0	1	0
New Mexico:									
Albuquerque	0	0	0	0	0	0	0	4	1
Utah:									
Salt Lake City	0	0	0	0	0	0	0	8	0
Nevada:									
Reno	0	0	0	0	0	0	0	1	1
PACIFIC									
Washington:									
Seattle	1	--------	0	--------	0	--------	0	0	--------
Oregon:									
Portland	1	0	0	1	0	0	0	0	0
California:									
Los Angeles	1	2	0	0	0	1	1	8	1
Sacramento	0	0	0	0	0	0	0	6	0
San Francisco	0	0	0	0	1	1	0	4	0

[1] Dengue: 4 cases at Charleston, S. C., and 1 case at Savannah, Ga.
[2] Typhus fever: 1 case at Atlanta, Ga., and 5 cases at Savannah, Ga.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended September 24, 1927, compared with those for a like period ended September 25, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, August 21 to September 24, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926[1]

DIPHTHERIA CASE RATES

	Week ended—									
	Aug. 28, 1926	Aug 27, 1927	Sept 4, 1926	Sept. 3, 1927	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927	Sept. 25, 1926	Sept. 24, 1927
101 cities	65	81	73	[2] 84	75	94	84	[3] 100	107	[4] 103
New England	50	86	26	88	38	93	35	53	73	91
Middle Atlantic	56	78	59	77	53	90	63	106	70	96
East North Central	76	81	99	87	78	90	95	82	128	[5] 105
West North Central	81	54	67	69	75	64	95	125	127	87
South Atlantic	61	89	69	[2] 89	136	109	110	112	127	[6] 106
East South Central	57	61	41	51	103	107	109	117	134	82
West South Central	34	96	60	164	86	151	77	138	69	200
Mountain	73	135	91	117	173	153	237	225	137	234
Pacific	91	94	134	73	91	92	99	[3] 55	212	[7] 72

MEASLES CASE RATES

	Aug. 28, 1926	Aug 27, 1927	Sept 4, 1926	Sept. 3, 1927	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927	Sept. 25, 1926	Sept. 24, 1927
101 cities	30	25	25	[2] 21	27	20	28	[3] 20	38	[4] 27
New England	38	58	33	58	35	63	19	30	38	39
Middle Atlantic	15	24	17	18	11	16	10	14	9	30
East North Central	43	13	31	11	20	15	23	18	24	[5] 18
West North Central	20	16	10	16	10	10	12	28	28	20
South Atlantic	15	31	9	[2] 18	19	14	9	14	11	[6] 37
East South Central	36	25	31	10	16	10	16	10	10	15
West South Central	4	17	0	42	4	17	4	17	0	0
Mountain	27	27	36	9	100	36	73	45	118	45
Pacific	94	52	91	42	158	34	212	[3] 59	308	[7] 53

SCARLET FEVER CASE RATES

	Aug. 28, 1926	Aug 27, 1927	Sept 4, 1926	Sept. 3, 1927	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927	Sept. 25, 1926	Sept. 24, 1927
101 cities	55	54	51	[2] 57	58	52	65	[3] 69	79	[4] 67
New England	54	81	59	60	80	53	75	102	71	123
Middle Atlantic	32	38	25	38	32	30	44	46	56	42
East North Central	55	61	58	80	61	65	60	89	80	[5] 70
West North Central	133	62	131	69	93	91	129	87	153	60
South Atlantic	58	63	37	[2] 60	56	60	48	78	78	[6] 106
East South Central	62	87	57	76	109	97	119	46	83	46
West South Central	26	59	26	59	47	46	30	42	52	50
Mountain	64	63	82	63	73	54	82	99	118	153
Pacific	75	37	70	34	88	31	118	[3] 46	118	[7] 75

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.
[2] Greenville, S. C., not included.
[3] Los Angeles, Calif., not included.
[4] Fort Wayne, Ind., Wilmington, N. C., and Tacoma, Wash., not included.
[5] Fort Wayne, Ind., not included.
[6] Wilmington, N. C., not included.
[7] Tacoma, Wash., not included.

Summary of weekly reports from cities, August 21 to September 24, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

SMALLPOX CASE RATES

	Week ended—									
	Aug. 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927	Sept. 25, 1926	Sept. 24, 1927
101 cities	4	5	2	[2] 4	2	4	2	[3] 5	3	[4] 6
New England	0	0	0	0	0	0	0	0	0	0
Middle Atlantic	0	0	0	0	0	0	0	0	0	0
East North Central	7	6	0	7	2	3	0	0	1	[5] 1
West North Central	0	4	0	2	2	12	0	22	2	8
South Atlantic	9	0	9	[2] 0	2	2	9	4	6	[6] 0
East South Central	0	25	10	0	0	10	0	0	0	10
West South Central	9	0	4	0	0	4	4	4	13	0
Mountain	0	27	0	36	0	9	0	27	0	162
Pacific	13	31	13	18	16	13	19	[3] 55	19	[7] 22

TYPHOID FEVER CASE RATES

	Aug. 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927	Sept. 25, 1926	Sept. 24, 1927
101 cities	40	31	40	[2] 32	45	30	53	[3] 33	44	[4] 28
New England	19	33	12	21	17	39	33	46	9	63
Middle Atlantic	39	21	34	28	34	27	55	37	45	24
East North Central	20	11	20	15	20	7	29	16	26	[5] 10
West North Central	42	20	42	10	50	32	26	24	26	14
South Atlantic	56	58	91	[2] 71	104	58	80	31	91	[6] 46
East South Central	233	204	176	183	284	112	248	153	165	87
West South Central	39	75	43	55	39	75	69	38	77	71
Mountain	18	45	9	54	18	63	82	36	36	36
Pacific	38	21	46	8	27	8	35	[3] 13	21	[7] 14

INFLUENZA DEATH RATES

	Aug. 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927	Sept. 25, 1926	Sept. 24, 1927
95 cities	3	5	3	[2] 4	4	4	4	[8] 4	6	[4] 3
New England	0	2	0	2	0	5	0	0	5	0
Middle Atlantic	3	2	2	3	4	3	3	4	3	2
East North Central	3	3	4	5	4	4	3	2	3	[5] 1
West North Central	8	2	4	4	0	0	4	4	8	2
South Atlantic	2	11	0	[2] 7	0	6	6	9	9	[6] 11
East South Central	0	15	16	5	0	10	5	0	10	10
West South Central	4	22	9	13	18	13	22	[9] 10	22	9
Mountain	18	9	9	18	36	9	0	9	9	0
Pacific	0	7	0	0	0	7	7	[3] 7	7	[7] 0

PNEUMONIA DEATH RATES

	Aug. 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927	Sept. 25, 1926	Sept. 24, 1927
95 cities	47	46	51	[2] 56	51	62	53	[8] 59	65	[4] 58
New England	33	51	50	49	40	65	54	39	75	70
Middle Atlantic	56	55	59	72	65	67	51	60	70	70
East North Central	37	34	34	51	37	59	40	53	45	[5] 43
West North Central	42	31	36	23	30	44	51	46	55	25
South Atlantic	59	37	64	[2] 42	44	50	55	77	79	[6] 65
East South Central	47	66	52	46	41	112	52	102	88	82
West South Central	71	65	49	82	97	65	115	[9] 73	93	69
Mountain	73	36	64	54	64	90	118	99	55	54
Pacific	21	62	78	55	57	52	53	[3] 55	78	[7] 63

[2] Greenville, S. C., not included.
[3] Los Angeles, Calif, not included.
[4] Fort Wayne, Ind., Wilmington, N. C., and Tacoma, Wash., not included.
[5] Fort Wayne, Ind., not included.
[6] Wilmington, N. C., not included.
[7] Tacoma, Wash., not included.
[8] Dallas, Tex., and Los Angeles, Calif., not included.
[9] Dallas, Tex., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,000
West North Central	12	10	2,585,500	2,620,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

THE FAR EAST

Report for week ended September 17, 1927.—The following report for the week ended September 17, 1927, was transmitted by the Eastern Bureau of the Health Section of the Secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Maritime towns	Plague		Cholera		Smallpox		Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths		Cases	Deaths	Cases	Deaths	Cases	Deaths
Madagascar: Tamatave	0	0	0	0	1	----	Dutch East Indies:						
Mauritius. Port Louis	1	0	0	0	0	0	Banjermasin	0	0	0	0	19	0
Iraq: Basra	0	0	8	2	1	1	Makassar [1]	0	0	0	0	0	0
Ceylon: Colombo	1	1	0	0	0	0	French Indo-China:						
British India:							Turane	0	0	5	3	0	0
Bombay	----	1	----	0	1	1	Saigon and Cholon	1	0	0	0	0	0
Madras	----	0	----	6	3	1	Hong Kong	0	0	0	0	1	1
Calcutta	----	0	----	5	10	5	China:						
Bassein	----	5	----	0	0	0	Amoy	0	0	19	----	0	0
Rangoon	----	4	----	2	1	0	Shanghai (Int. S.)	0	0	----	22	0	0
Vizagapatam	----	0	----	0	1	0	Canton	0	0	7	7	0	0
Siam. Bangkok	0	0	1	1	0	0	Newchwang	0	0	3	0	0	0
							Kwantung: Dairen	0	0	1	1	0	0

[1] 1 plague-infected rat was found during the week.

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week.

ASIA

Aden Protectorate.—Aden, Perim, Kamaran.

Arabia.—Bahrein.

Persia.—Bender-Abbas, Bushire, Lingah.

India.—Karachi, Chittagong, Cochin, Tuticorin, Negapatan, Moulmein.

Portuguese India.—Nova Goa.

Federated Malay States.—Port Swettenham.

Straits Settlements.—Penang, Singapore.

Dutch East Indies.—Batavia, Pontianak, Semarang, Cheribon, Padang, Belawan-Deli, Tarakan, Palembang, Menado, Sabang, Surabaya.

Sarawak.—Kuching.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

Portuguese Timor.—Dilly.

Philippine Islands.—Iloilo, Jolo, Cebu, Zamboanga, Manila.

French-Indo China.—Haiphong.

China.—Tientsin, Tsingtao.

Macao.

Wei-hai-wei.

Formosa.—Keelung, Takao.

Chosen.—Chemulpo, Fusan.

Manchuria.—Yingkow, Antung, Harbin, Mukden, Changchun.

Kwantung.—Port Arthur.

Japan.—Nagasaki, Yokohama, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns, Port Moresby.

New Guinea.—Port Moresby.

New Britain Mandated Territory.—Rabaul and Kokopo.

New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.

Western Samoa.—Apia.

New Caledonia.—Noumea.

Fiji.—Suva.

Hawaii.—Honolulu.

Society Islands.—Papeete.

AFRICA

Egypt.—Alexandria, Port Said, Suez.
Anglo-Egyptian Sudan.—Port Sudan, Suakin.
Eritrea.—Massaua.
French Somaliland.—Djibouti.
British Somaliland.—Berbera.
Italian Somaliland.—Mogadiscio.
Kenya.—Mombasa.
Zanzibar.—Zanzibar.
Tanganyika.—Dar-es-Salaam.
Seychelles.—Victoria.
Portuguese East Africa.—Mozambique, Beira, Lourenco-Marques.
Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.
Reunion.—St. Denis
Madagascar.—Majunga, Diego-Suarez.

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from:

Dutch East Indies.—Balikpapan, Samarinda.
Persia.—Mohammerah.
Union of Socialist Soviet Republics—Vladivostok.

Belated information:

Week ended September 10 *Banjermasin,* 55 smallpox cases and 3 deaths.
Week ended September 10 *Tientsin,* 1 fatal cholera case.

Movement of Infected Ships

Penang.—The mail steamer *Talamba* arrived September 15 from Amoy, having touched at Singapore infected with cholera.

CANADA

Communicable diseases—Week ended September 24, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases from seven Provinces of Canada for the week ended September 24, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever				1				1
Influenza	4							4
Poliomyelitis	4			2		2	58	66
Smallpox				10		22	8	40
Typhoid fever	2	8	17	18	1	7	2	55

Communicable diseases—Quebec—Week ended September 24, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended September 24, 1927, as follows:

Disease	Cases	Disease	Cases
Chicken pox	11	Scarlet fever	45
Diphtheria	61	Tuberculosis	33
Influenza	2	Typhoid fever	17
Measles	13	Whooping cough	13
Poliomyelitis (infantile paralysis)	1		

Typhoid fever—Montreal—January 2–October 1, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	May 28, 1927	353	38
Jan. 15, 1927	4	3	June 4, 1927	239	37
Jan. 22, 1927	1	2	June 11, 1927	128	36
Jan. 29, 1927	3	1	June 18, 1927	86	....
Feb. 5, 1927	1	0	June 25, 1927	75	23
Feb 12, 1927	0	0	July 2, 1927	66	21
Feb. 19, 1927	1	2	July 9, 1927	52	10
Feb. 26, 1927	1	1	July 16, 1927	39	4
Mar 5, 1927	9	1	July 23, 1927	22	9
Mar. 12, 1927	203	4	July 30, 1927	23	10
Mar. 19, 1927	383	14	Aug. 6, 1927	16	5
Mar 26, 1927	568	22	Aug 13, 1927	20	5
Apr. 2, 1927	649	48	Aug. 20, 1927	14	4
Apr. 9, 1927	386	40	Aug. 27, 1927	8	3
Apr. 16, 1927	175	38	Sept 3, 1927	27	....
Apr 23, 1927	125	43	Sept. 10, 1927	17	....
Apr 30, 1927	105	23	Sept. 17, 1927	13	2
May 7, 1927	106	19	Sept. 24, 1927	6	3
May 14, 1927	367	16	Oct 1, 1927	18	1
May 21, 1927	770	26			

Poliomyelitis—Edmonton and vicinity, Alberta—September 16–22, 1927.—During the week ended September 22, 1927, 10 cases of poliomyelitis with 1 death were reported at Edmonton, Alberta, and vicinity. It was stated that the public schools had been opened.

CANARY ISLANDS

Plague—Las Palmas.—Four cases of plague were reported at Las Palmas, Canary Islands, on October 8, 1927.

CUBA

Typhoid fever—Malaria—Santiago—Week ended September 24, 1927.—During the week ended September 24, 1927, three cases of typhoid fever with one death were reported at Santiago, Cuba. There were stated to be in the city on September 24, 1927, 39 cases of malarial and 14 cases of typhoid fever officially reported.

Water supply.—The available water supply at Santiago was said to be insufficient in quantity and of unsatisfactory quality.

EGYPT

Plague—August 27–September 2, 1927.—During the week ended September 2, 1927, two cases of plague, occurring at the city of Alexandria were reported in Egypt.

Summary.—During the period January 1 to September 2, 1927, 65 cases of plague were reported in Egypt, as compared with 116 cases reported for the corresponding period of the year 1926.

Plague case at Suez—September 4, 1927.—One case of plague was reported at Suez, September 4, 1927.

JAPAN

Dysentery—Tokyo, city and prefecture—July 31–September 3, 1927.—During the period July 31 to September 3, 1927, dysentery was reported at Tokyo, and in the prefecture, as follows: Tokyo city—cases, 547; deaths, 203. Population, 1,995,567. Prefecture—cases, 808; deaths, 374. Population, 2,489,577.

MALTA

Communicable diseases—July, 1927.—During the month of July, 1927, communicable diseases were reported in the island of Malta as follows:

Disease	Cases	Disease	Cases
Broncho-pneumonia	6	Poliomyelitis	1
Diphtheria	3	Puerperal fever	1
Erysipelas	1	Scarlet fever	3
Influenza	2	Trachoma	41
Lethargic encephalitis	1	Tuberculosis	21
Malaria	3	Typhoid fever	70
Malta fever	90	Whooping cough	12
Pneumonia	2		

Population (civil), estimated, 227,440.

Mortality.—The total number of deaths reported during the month of July, 1927, was 575, including diphtheria, 2, and tuberculosis, 17.

MEXICO

Further relative to typhoid fever—Nogales.[1]—Further information received regarding the prevalence of typhoid fever in Nogales, Mexico, showed 80 cases estimated as having occurred in August and September to date of the report. The water supply of Nogales, Mexico, is obtained from deep wells, and it is stated that within 300 meters of the wells there are approximately 200 cesspools. According to the report, bacteriological examination of the water from these wells showed the presence of *B. coli* in all samples.

NORWAY

Poliomyelitis—July–September 17, 1927.—Information received under date of September 20, 1927, shows poliomyelitis present in six localities in Norway during the period July to September 17, 1927, with a total of 25 reported cases and 7 cases present on September 17, 1927.

RUMANIA

Further relative to poliomyelitis—September 15, 1927.—Information received under date of September 15, 1927, shows 82 cases of poliomyelitis present at Bucharest and 70 cases in the Provinces on that date. It was stated that the crisis of the epidemic was believed to have passed.[2]

[1] Public Health Reports, Oct. 7, 1927, p. 2477.
[2] Public Health Reports, Sept. 30, 1927, p. 2422.

SENEGAL

Plague—Yellow fever—September 12–18, 1927.—Plague and yellow fever were reported in Senegal, West Africa, during the period September 12 to 18, 1927, as follows:

Plague.—Interior: Baol region—cases 27, deaths 15; Cayor region—cases 175, deaths 90. Urban occurrence—Dakar, cases 5, deaths 3. Rufisque—cases 2, with 1 death in suburb.

Yellow fever.—Three suspect cases occurring one each at Goree Island, in a European who refused to go to the Dakar lazaretto with other Europeans, at Kaolack, in a Moroccan, and at Pout in a Syrian. At Thies a fatal case was reported.

VENEZUELA

Mortality from infantile diseases and tuberculosis—Caracas—August, 1927.—During the month of August, 1927, 47 deaths from diarrhea and enteritis, of which 37 were in children under 2 years old, and 28 deaths from tuberculosis, were reported at Caracas, Venezuela. The total number of deaths reported for all causes was 253. Population, 135,253.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the lists of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended October 14, 1927[1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	Aug. 14-27	20	5	
Canton	July 31-Aug. 27	31	16	
Foochow	Aug 21-27			Present.
Shanghai	Aug. 21-Sept. 3	2	45	Cases, in International Settlements.
Swatow	Aug. 21-27			Prevalent.
India				July 31-Aug. 13, 1927: Cases, 22,600; deaths, 10,892.
Bombay	Aug. 14-20	6	3	
Calcutta	Aug. 21-27	18	7	
Madras	Aug. 28-Sept. 3	29	24	
India, French settlements in	June 19-July 16	156	101	
Indo-China	July 11-Aug. 10	2,495		
Annam	do	1,469		
Cambodge	do	100		
Cochin-China	do	165		
Laos	do	137		
Tonkin	do	624		
Iraq:				
Basra	Sept. 4-10	21	15	
Philippine Islands:				
Manila	Aug. 21-27	1		
Siam				Aug. 14-20, 1927: Cases, 22; deaths, 12. Apr. 1-Aug. 20, 1927: Cases, 678; deaths, 468.
Bangkok	Aug. 14-20	1	1	District.

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended October 14, 1927—Continued

PLAGUE

Place	Date	Cases	Deaths	Remarks
Azores:				
St. Michaels	July 3-9	1		At Arrifes.
Do	Aug. 7-27	2		Arrifes, 1; Ribeira Grande, 1.
Brazil:				
Sao Paulo	June 3-19	1	1	
British East Africa:				
Kenya	July 1-31	13		
Ceylon:				
Colombo	Aug. 21-27	1		
Egypt				Jan. 1-Sept. 3, 1927: Cases, 65; corresponding period 1926, cases, 116.
Alexandria	Aug. 27-Sept. 2	2		
Suez	Sept. 4	1		
India				July 31-Aug. 13, 1927: Cases, 709; deaths, 256.
Bombay	Aug. 14-20	5	4	
Madras (Presidency)	Aug 7-13	154	92	
Rangoon	Aug. 21-27	4	3	
Indo-China (French)	July 11-Aug. 10	18		
Kwang-Chow-Wan	July 11-31	5		
Java:				
Batavia	Aug. 21-27	15	16	Province.
Senegal:				
Interior—				
Baol region	Sept. 12-18	27	15	
Cayor region	do	175	90	
Urban—				
Dakar	do	5	3	
Rufisque	do	2	1	In suburb.
Siam				Apr. 1-Aug. 20, 1927: Cases, 10; deaths, 7.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	July 11-31	234		
Brazil:				
Rio de Janeiro	Aug. 28-Sept. 3	5	1	
British South Africa:				
Northern Rhodesia	Aug. 13-26	50	1	Natives.
Canada.				
Alberta	Sept. 18-24	8		
Ontario	do	10		
Ottawa	Sept. 25-Oct. 1	3		
Toronto	Sept. 18-24	1		
Saskatchewan	do	22		
Moose Jaw	do	7		
China:				
Foochow	Aug. 20-27			Present.
Chosen	June 1-30	56	10	
France	July 1-31	23		
Gold Coast	June 1-30	8		
India				July 31-Aug. 13, 1927: Cases, 3,361; deaths, 999.
Bombay	Aug. 14-20	5	3	
Calcutta	Aug. 21-27	7	7	
Madras	Aug. 28-Sept. 3	2		
Rangoon	Aug. 21-27	1		
India, French Settlements in	June 19-July 10	51	36	
Indo-China	July 21-Aug. 10	4		
Saigon	Aug. 13-19	1		Including Cholon.
Iraq:				
Baghdad	Sept. 4-10	1	1	
Basra	do	1	1	
Mexico	Apr. 1-May 31		395	
Morocco	July 1-31	53		
Nigeria	June 1-30	275	57	
Portugal:				
Lisbon	Aug. 28-Sept. 17	2		
Siam				Aug. 14-20, 1927. Cases, 6; deaths, 1. Apr 1-Aug. 20, 1927: Cases, 198; deaths, 50.
Spain:				
Madrid	Aug. 1-31		1	
Union of South Africa:				
Cape Province	Aug. 14-20			Outbreaks.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended October 14, 1927—Continued

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Bulgaria	June 21-July 10	16	2	
Chile:				
Valparaiso	Aug 28-Sept. 3	1	1	
China:				
Antung	Aug. 15-21	1		
Chosen	June 1-30	209	18	
Lithuania	July 1-31	44	5	
Mexico	Apr. 1-May 31		52	
Mexico City	Sept. 11-17	1		
Morocco	July 11-Aug 20	137		
Rumania	June 26-July 23	33	3	

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Gold Coast	June 1-30	15	2	
Senegal				Sept. 12-18, 1927. 3 suspect cases, occurring 1 each at Goree Island, Kaolack, and Pout; European, 1.
Thies	Sept. 12-18	1	1	

Reports Received from June 25 to October 7, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-Aug 13	11	3	
Canton	May 1-July 23	16	7	
Foochow	July 24-30			Present.
Hong Kong	July 17-23	2	2	
Kulangsu	June 21	1		
Shanghai	June 19-25	2		
Do	July 31-Aug. 20		16	In international settlement and French concession.
Swatow	May 15-Aug. 6	138	13	
India	Apr 17-July 30			Cases, 125,674; deaths, 71,156.
Bombay	May 8-Aug. 13	115	50	
Calcutta	May 8-Aug. 20	633	380	
Karachi	May 29-June 4	1	1	
Madras	June 19-Aug 29	760	386	
Rangoon	May 8-Aug 13	18	14	
India, French settlements in	Mar. 30-June 30	15	8	
Indo-China (French)	Apr 1-July 10			Cases, 11,145.
Annam	do	1,467		
Cambodge	do	235		
Cochin-China	do	1,354		
Saigon	June 4-July 21	10	4	
Tonkin	Apr. 1-June 30	8,089		
Iraq:				
Baghdad	July 24-30	29	18	
Basra	July 17-Aug. 27	353	264	
Japan:				
Yokohama	July 31-Aug. 6	1	1	
Persia:				
Abadan	July 24-Aug. 13	215	183	
Ahwaz	July 31-Aug. 13	20	13	
Minab	Aug. 7-13		23	
Mohammerah	July 17-Aug. 27	194	155	
Nasseri	July 10-31		10	
Philippine Islands:				
Manila	July 17-23	1		
Bulacan Province	June 7-July 8	3	2	
Leyte Province—				
Barugo	June 29	1	1	
Carigara	June 23	1	1	Final diagnosis not received.
Palo	May 18	1		
Siam	May 1-Aug. 13			Cases, 269; deaths, 165.
Bangkok	do	44	13	
On vessel:				
S. S. Adrastus	Reported Aug. 6	1	1	At Yokohama, Japan.
S. S. War Mehtar (oil tanker).	Aug. 4	1	1	At Saffagha, Egypt.

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 7, 1927—Continued

PLAGUE

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	Aug. 21-31	1		
Oran	Aug. 21-Sept 10	5	4	
Argentina	Jan. 1-Aug 2			Cases, 80; deaths, 44.
Buenos Aires	Apr. 10-May 7	4	3	
Cordoba	Jan. 11-Aug 6	52	29	
Corrientes	June 1	1	1	
Entre Rios	Mar. 29-Aug. 13	8	1	
Santa Fe	Apr. 28-May 16	4	3	
Territory—				
Chaco—				
Barranqueras	May 29	2	2	
Formosa	June 25	3	2	
Pampa	July 27-Aug. 2	4		
Rio Negro	Aug 6	1		
City—				
Merou	Reported July 14			Present.
Rosario	May 7	1	1	
Santa Fe	May 16	4	2	
Azores:				
St. Michaels Island	May 15-July 30	3		
Ribeira Grande	June 12-18	1		
British East Africa.				
Kenya	Apr 24-July 2	60	14	
Mombassa	July 24-30	1	1	
Nairobi	May 22-28	6		
Tanganyika	Mar 29-May 28		37	
Do	July 24-Aug 6		10	
Uganda	Jan. 1-Feb. 28	138	121	
Do	Mar. 27 June 18	366	300	
Canary Islands				
Laguna district—				
Tejina	June 17	1		
Ceylon.				
Colombo	May 1-July 2	17	11	Plague rats, 4.
China:				
Amoy	July 3-23			Present in surrounding country.
Tientsin	Aug. 14-20	2		
Ecuador:				
Guayaquil	June 1-July 31			Rats taken, 48,290; found infected, 34.
Egypt	May 1-July 8			Cases, 7; deaths, 2.
	Aug. 6-12			Cases, 5.
Alexandria	June 4-10	1		
Beni-Souef	June 4-July 13	5	2	
Biba	June 4-10	1		At Nama.
Dakhalia	June 24-July 9	6	1	
Minia	Aug 8-9	4		
Port Said	June 24-July 21	4	1	
Tanta district	June 4-10	1		
Greece	May 1-June 30	4	3	
Athens	June 1-Aug. 29	3		Including Piraeus.
Mytilene	Aug. 9	1		
Patras	May 30-Sept. 4	8	1	
Hawaii Territory:				
Hamakua	July 15			1 plague rodent.
Honokaa	May 17-23	2	2	
Kukuihaele	Aug. 12-17	1	1	1 plague rodent.
Paauilo	July 26-Aug. 1		4	
India	Apr. 17-July 16			Cases, 21,814; deaths, 8,324.
Bombay	May 8-Aug. 13	90	77	
Madras	May 1-Aug. 6	552	252	
Rangoon	May 8-Aug. 20	59	55	
Indo-China (French)	Apr. 1-July 10	32		
Kwang-Chow-Wan	May 21-July 10	68		
Iraq:				
Baghdad	Apr. 8-May 28	12	1	
Java:				
Batavia	May 1-Aug. 20	228	228	Province.
East Java and Madura	May 22-July 16	28	27	
Pasoeroean Residency	May 9			Outbreak reported at Nagdiwano.
Surabaya	Apr. 17-Aug. 6	56	55	
Madagascar				Mar. 16-Apr 30, 1927: Cases 256; deaths, 135.
Province—				
Ambositra	Mar. 16-July 15	94	87	
Antisrabe	Mar. 16-May 15	8	8	
Miarinarivo (Itasy)	Mar. 16-July 15	65	50	
Moramanga	May 16-July 15	24	23	
Tananarive	Mar. 16-July 15	221	104	
Tananarive Town	Mar. 16-June 30	22	20	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 7, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Nigeria	Mar. 1-May 31	228	177	
Peru	Apr.-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	do	13	4	
Lima City	Apr. 1-30	5	1	
Senegal	May 23-Sept. 11			Cases, 901; deaths, 531.
Baol	June 2-Sept. 11	100	47	
Cayor Frontier	July 4-Sept. 11	537	325	
Dakar	June 20-Sept. 11	140	90	
Facel	July 6	17	8	
Guindel	June 20-26	11	2	
M'Bour	July 6-10	28	23	
Medina	June 13-19	2	2	
Pout	July 4-10	1		
Rufisque	May 23-Sept. 11	220	165	
Thies district	do	29	11	
Tivaouane	June 2-July 17	50	32	
Siam	Apr. 1-Aug. 13			Cases, 10; deaths, 7.
Bangkok	May 8-June 11	2	1	
Syria:				
Beirut	June 11-July 10	3		
Tunisia	Apr. 21-July 10	144		
Tunis	July 25-Aug. 1	1		
Turkey.				
Constantinople	May 13-19	1		
Union of South Africa.				
Cape Province—				
Maraisburg district	May 1-14	2	2	Native.
Orange Free State—				
Edenburg district	July 17-26	3	3	Natives; on farm.
Rouxville district	July 24-Aug. 6	2	2	
On vessel:				
S. S. Avoroff	June 24-30	1		On Greek warship at port of Athens.
S. S. Capafric	Aug. 23	3	1	At Duala, French Cameroons, from Nigeria.
S. S. Elcano	Aug. 19	1		At Piraeus, Greece.
S. S. Madonna	Aug 24	1		At Dakar, Senegal, from ports south.
S. S. Ransholm	Aug. 5	3		At Gefle, Sweden, from Rufisque, Senegal.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-July 10			Cases, 648.
Algiers	May 11-June 30	8		
Oran	May 21-Sept. 10	51		
Angola	June 1-July 15	18		
Arabia:				
Aden	July 17-Aug. 1	2	1	
Brazil:				
Porto Alegre	July 1-31	5		
Rio de Janeiro	May 22-Aug. 27	15	12	
British East Africa:				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 29-June 18	2	22	
Zanzibar	Apr. 1-May 31	19	7	
British South Africa:				
Northern Rhodesia	Apr. 30-Aug. 12	111	2	
Canada	June 5-Sept. 17			Cases, 500.
Alberta	June 12-Sept. 17			Cases, 102.
Calgary	June 12-Aug. 27	9		
British Columbia—				
Vancouver	May 23-Sept. 4	4		
Manitoba	June 5-Sept. 17			Cases, 38.
Winnipeg	June 12-Sept. 16	21		
Nova Scotia	Sept. 11-17	1		
Ontario	June 5-Sept. 17			Cases, 205.
Ottawa	June 12-Sept. 24	138		
Sarnia	Aug. 7-13	1		
Toronto	June 19-Sept. 10	10		
Quebec	June 19-Aug. 27	15		
Saskatchewan	June 12-Sept. 10			Cases, 104.
Moose Jaw	Aug. 14-Sept. 10	14		
Regina	July 17-Aug. 27	10		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 7, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Ceylon	May 1-7			Cases, 3; deaths, 1.
Colombo	July 31-Aug. 6	1	1	
China:				
Amoy	May 8-28	1		
Do	July 3-16			Present in surrounding country.
Antung	July 4-31	3		
Chefoo	May 8-14			Present.
Foochow	May 8-Aug. 13			Do.
Hong Kong	do	20	19	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-July 30	8		
Dairen	May 2-July 3	10	5	
Fushun	May 15-July 30	10		
Harbin	June 13-July 10	4		
Kaiyuan	July 3-9	2		
Mukden	May 22-July 30	6		
Pensihu	July 3-9	1		
Ssupingkai	May 8-July 9	3		
Tientsin	May 8-July 30	18		
Chosen	Feb. 1-May 31			Cases, 451; deaths, 195.
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr. 1-30	1		
Curaçao	May 29-June 4	1		Alastrim.
Ecuador:				
Guayaquil	June 1-30	2		
Egypt	May 7-July 29			Cases, 21; deaths, 3.
Alexandria	May 21-June 17	4	1	
Cairo	Jan. 22-Apr 15	14	3	
France	Apr. 1-June 30			Cases, 178.
Lille	July 24-30	1		
Paris	May 21-July 31	14	2	
Gold Coast	Mar 1-May 31	33	7	
Great Britain:				
England and Wales	May 22-Sept 10			Cases, 2,964.
Birmingham	Aug 14-20	1		
Bradford	May 29-June 11	2		
Cardiff	June 19-July 2	4		
Leeds	July 17-Sept. 3	13		
Liverpool	July 17-30	1		
London	May 15-June 18	2		
Newcastle upon Tyne	June 12-Aug. 13	5		
Sheffield	June 12-Aug. 6	25		
Stoke-on-Trent	Aug. 21-27	1		
Scotland—				
Dundee	May 29-Sept. 3	6		
Greece	June 1-30	14		
Salonika	July 12-Aug. 15		2	
Guatemala:				
Guatemala City	June 1-30		9	
Guinea (French)	June 4-10	9		
India	Apr. 17-July 30			Cases, 68,687; deaths, 18,006.
Bombay	May 28-Aug. 13	227	147	
Calcutta	May 8-Aug. 20	383	294	
Karachi	May 15-Aug. 6	10	5	
Madras	May 22-Aug. 27	24	6	
Rangoon	May 8-Aug. 20	182	155	
India, French Settlements in	Mar. 20-June 18	174	111	
Indo-China (French)	Mar. 21-July 20			Cases, 314.
Saigon	May 14-July 21	2	1	
Iraq:				
Baghdad	Apr. 10-16	2		
Basra	Apr. 10-Aug. 20	3	2	
Italy	Apr. 10-May 21	13		
Rome	June 13-July 10	2		
Jamaica	May 29-Aug. 27	30		Reported as alastrim.
Japan	Apr. 3-May 7			Cases, 19.
Nagasaki City	June 20-Aug. 14	26	7	
Taiwan Island	May 21-31	1		
Java:				
Batavia	May 22-Aug. 20	7		
East Java and Madura	Apr. 24-July 30	13		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 7, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Latvia	Apr. 1-30	1		
Mexico	Mar. 1-31			Deaths, 162.
Durango	June 1-30		1	
La Oroya	Apr. 1-June 30			Present.
Monterey	July 1-31	6	4	
San Luis Potosi	May 29-Aug. 13		11	
Tampico	June 1-July 31	1	2	
Torreon	Aug. 7-13		1	
Morocco	Apr. 1-June 30	154		
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in two localites.
Pasir Residency	Apr. 30-May 6			Epidemic outbreak.
Samarinda Residency	May 21-27			Do.
Nigeria	Mar 1-May 31	2,077	513	
Paraguay:				
Asuncion	July 10-23		2	
Persia:				
Teheran	Feb 21-June 22		14	
Poland	Apr. 10-Aug. 6	20	2	
Portugal:				
Lisbon	May 29-Aug. 6	17	1	
Oporto	Sept. 3-9	1		
Senegal:				
Medina	July 4-10	7		
Siam	Apr. 1-Aug. 13			Cases, 192; deaths, 49.
Bangkok	May 1-July 23	13	7	
Spain:				
Valencia	May 29-June 4	2		
Straits Settlements	June 12-18			Cases, 3.
Singapore	Apr 1-June 18	7	2	
Sumatra:				
Medan	June 5-Aug. 20	3		
Switzerland:				
Berne	June 26-July 2	1		
Syria.				
Damascus	Aug. 11-31	3		
Tunisia	Apr. 1-June 10			Cases, 10.
Tunis	June 1-10	1		
Union of South Africa:				
Cape Province	July 17-23			Outbreaks.
Elliott district	May 11-June 10			Do.
Idutywa district	July 3-9			Do.
Kalanga district	May 11-June 10			Do.
Mount Ayliffe district	July 31-Aug. 6			Do.
Orange Free State	Aug. 7-13			Do.
Transvaal—				
Barberton district	May 1-7			Do.
Venezuela:				
Maracaibo	July 12-18		1	

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-July 20			Cases, 399; deaths, 39.
Algiers	May 11-Aug. 31	26		
Oran	May 21-Aug. 31	34		
Bulgaria	Mar. 1-June 20			Cases, 206; deaths, 18.
Sofia	June 4-Aug. 5	2		
Chile:				
Antofagasta	Apr. 16-May 31	1		
Concepcion	May 29-June 4		1	
La Calera	Apr. 16-May 31	1		
Ligua	Mar. 16-31	2		
Puerto Montt	Apr. 16-May 31	1		
Santiago	do	5	1	
Talcahuano	July 10-16		1	
Valparaiso	Apr. 16-Aug. 27	4	2	
China:				
Manchuria—				
Harbin	July 25-31	3		
Mukden	May 29-June 4	1		
Tientsin	July 10-16	1		
Chosen	Feb. 1-May 31			Cases, 512; deaths, 42.
Chemulpo	May 1-July 31	1		
Gensan	do	4		
Seoul	Apr. 1-July 31	32	3	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 7, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Czechoslovakia	Apr. 1—July 31			Cases, 55.
Egypt	May 28-July 29			Cases, 120; deaths, 18.
Alexandria	May 21-Aug. 5	13	5	
Cairo	Jan 15-May 20	37	12	
Estonia	Apr 1-June 30			Cases, 5.
Greece	June 1-30	2		
Athens	June 1-July 31	1	9	
Iraq:				
Baghdad	Apr. 24-30	1		
Irish Free State:				
Cork County	July 3-9	1		In urban district.
Latvia	Apr 1-July 31	32		
Lithuania	Feb 1-June 30	303	37	
Mexico	Feb 2-Mar 31			Deaths, 83.
Mexico City	May 29-Sept 10	53		Including municipalities in Federal district.
San Luis Potosi	July 31-Aug 6		1	
Morocco	Apr 1-July 10	815		
Palestine	May 24-Sept 5			Cases 19
Haifa	May 24 Aug. 29	8		
Jaffa	Aug. 2-15	2		
Jerusalem	June 28-Aug 15	3		
Mahneim	May 17-23	1		In Safad district.
Nazareth	July 19-25	1		
Safad	May 17-Aug 8	10		
Peru.				
Arequipa	Apr 1-30		1	
Poland	Apr. 10-Aug 13	1,056	98	
Portugal.				
Lisbon	May 29-June 4	1		
Oporto	Aug 20-27	1		
Rumania	Apr 3-June 25	923	61	
Spain:				
Seville	Aug 19-25		2	
Tunisia	Apr 22-July 20			Cases, 158
Tunis	July 5-Aug. 21	2		
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa	Apr 1-30			Cases, 55, deaths, 8, native. In Europeans, cases, 2.
Cape Province	Apr. 1-Aug. 6	42	5	
Albany district	June [illegible]			[illegible]
East London	May 22-28	1		Do
Glen Gray district	May 1-7			Do
Kentani district	June 26-July 2			Do
Port Elizabeth	Aug. 7-13	1		
Qumbu district	May 1-7			Do.
Umzimkulu district	June 26-July 2			Do.
Natal	Apr 1-Aug. 6	7	3	
Impendhle district	June 5-11			Do
Orange Free State	Apr. 1-July 23	5		
Transvaal	Apr 1-30	1		
Johannesburg	July 3-Aug. 20	19	5	
Yugoslavia	May 1-Aug 31			Cases, 24, deaths, 5.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Ashanti:				
Obuasi	Aug 6	1	1	
Dahomey (West Africa):				
Porto Novo	July 1	1	1	In Syrian woman.
Gold Coast	Apr. 1-May 31	45	20	
Do	Aug. 4	2		
Ivory Coast	July 29	1	1	
Liberia:				
Monrovia	May 29-July 8	4	5	
Senegal	May 27-July 31			Cases, 5; deaths, 2.
Dakar	July 9	1		
Do	Aug. 8	2	2	
Do	Sept. 17			Present.
Island of Goree	Aug. 22-Sept. 4	2	2	
Khembole	Aug 1-14	3		
M'Bour	May 27-June 19	5	5	
Ouakam	June 2-Aug. 14	4	2	
St. Louis	Aug. 1-14	2	2	
Thies	July 10	1	1	In European.
Tiaroye	Aug. 22-Sept. 4	1	1	
Tivaouane	May 27-Sept. 11	6	5	
Togoland:				
Meiatza	Aug. 15-21	1	1	

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TREASURY DEPARTMENT

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SPECIAL ARTICLES

Studies on Efficiency of Water-Purification Processes
Cooperative Rural Health Work in 1926-27
Reports of the Health Section, League of Nations

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1927

UNITED STATES PUBLIC HEALTH SERVICE

HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

ASST. SURG. GEN. R. C. WILLIAMS, *Chief of Division*

The PUBLIC HEALTH REPORTS are issued weekly by the United States Public Health Service through its Division of Sanitary Reports and Statistics, pursuant to acts of Congress approved February 15, 1893, and August 14, 1912.

They contain: (1) Current information of the prevalence and geographic distribution of preventable diseases in the United States in so far as data are obtainable, and of cholera, plague, smallpox, typhus fever, yellow fever, and other communicable diseases throughout the world. (2) Articles relating to the cause, prevention, or control of disease. (3) Other pertinent information regarding sanitation and the conservation of the public health.

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PUBLIC HEALTH REPORTS

VOL. 42 OCTOBER 21, 1927 NO. 42

REPORT ON STUDIES OF THE EFFICIENCY OF WATER-PURIFICATION PROCESSES

Studies of the bacterial efficiency of municipal water purification plants have formed a logical part of the stream pollution investigations undertaken by the Public Health Service under authority of an act of Congress of 1912. These investigations, having dealt principally with the public health aspects of stream pollution, the safety of public water supplies, and, more especially, the relation between the sanitary quality of such supplies and the permissible degree of pollution of their sources, have been subjects of basic importance for inquiry. A report on these studies by Sanitary Engineer H. W. Streeter, has just been issued as Public Health Bulletin No. 172.

The main objectives of the studies dealt with in this report are the following:

(*a*) An appraisal of the bacterial efficiency of well-designed and well-operated municipal water purification plants treating sewage-polluted river waters; and

(*b*) A determination, if possible, of the maximum limit of bacterial pollution of river water supplies, as delivered for treatment, consistent with the production of effluents conforming to specified standards of bacterial quality.

In the latter connection, reference is made to a limiting standard, recommended in 1914 by the International Joint Commission, defining the maximum permissible density of *B. coli* in raw waters taken from the international boundary waters of Canada and the United States for purification.

During a period of 13 months in 1915–16, the Public Health Service undertook a preliminary observational study of the Cincinnati and Louisville filtration plants, taking their raw water supplies from the Ohio River. From this study a well-defined relation was found to exist between variations in the bacterial quality of the raw water and concurrent variations in the quality of the effluents obtained at successive stages of treatment, including the final stage. From this relationship it was indicated that the maximum *B. coli* index of the raw water, consistent with the production of a final (chlorinated) effluent conforming to the original United States Treasury Department drinking water standard, was about 630 per 100 cubic centimeters. The corresponding limit fixed by the International

Joint Commission raw water standard was 500 *B. coli* (index) per 100 cubic centimeters.

Further studies of the problem were delayed, owing to the war, and were not resumed until 1923, when a collective survey of 17 municipal water-filtration plants was undertaken, 10 of these plants being located along the Ohio River and the remainder on other rivers in the Eastern and Middle Western States. From this survey, the following tentative conclusions were drawn:

1. Under normal conditions of their operation, all of the plants studied have shown a fairly definite relationship as existing between variations in the bacterial quality of their raw-water supplies and concurrent variations in the quality of effluents produced by them at successive stages of treatment.

2. In general, the nature of this relationship has been found to be expressed by the equation $E=cR^n$, in which (R) represents the bacterial content of the raw, or influent, water, (E) that of the effluent water, and (c) and (n) empirical constants.

3. The over-all efficiency of bacterial purification, when expressed in terms of *B. coli* removal, appears to be influenced to a relatively slight, if any, extent by changes in temperature and other seasonal conditions, or by variations in raw-water turbidity, all other conditions being equal.

4. According to the best statistical evidence afforded by the surveys, as based on the mean performance of the 10 Ohio River plants, the maximum *B. coli* index of raw river waters of the Ohio River type, consistent with producing a final chlorinated effluent conforming to the revised Treasury Department standard, approximates 5,000 per 100 cubic centimeters. The corresponding maximum raw-water *B. coli* index consistent with producing *unchlorinated* effluents meeting the same standard was found, however, to average as low as 60 per 100 cubic centimeters. Plants more highly elaborated than the average, such as those equipped with double-stage sedimentation and coagulation, appear to be able to produce satisfactory chlorinated effluents from river waters having a *B. coli* index somewhat in excess of 10,000 per 100 cubic centimeters.

5. Water purification plants operated along the Ohio River are unable, under existing conditions of pollution of this stream, to produce unchlorinated effluents conforming, as an average, to the revised Treasury Department *B. coli* standard, though they are able, by the continuous and effective use of chlorine, to produce, for a large part of the time, chlorinated effluents meeting this standard. On the basis of the average limit of tolerance above stated, two of the Ohio River plants surveyed, located, respectively, at Ironton, Ohio, and Ashland, Ky., were indicated as being overburdened by excessive bacterial pollution of the river in the zone from which their raw-water supplies are obtained.

6. With one exception, all of the seven plants surveyed, located elsewhere than on the Ohio River, were able to produce satisfactory final effluents from raw waters having a *B. coli* index not exceeding 5,000 per 100 cubic centimeters. Two plants of this group, located, respectively, at Albany, N. Y., and Chester, Pa., were shown to be overburdened by excessive raw water pollution, on the basis of the criterion above given.

Aside from those above stated, no final conclusions can be drawn from the surveys described until their results have been checked against the results of experimental studies in progress at this time, and possibly also further surveys of full-scale plants located in other sections of the country. Systematic and well-correlated observations of full-scale plant performance thus far have included no examples of plants found west of the Mississippi River and but one example of plants treating water from the Great Lakes.

Public Health Bulletin No. 172, containing the full report, may be purchased from the SUPERINTENDENT OF DOCUMENTS, Government Printing Office, Washington, D. C., at $1 per copy.

COOPERATIVE RURAL HEALTH WORK OF THE PUBLIC HEALTH SERVICE IN THE FISCAL YEAR 1927 [1]

By L. L. LUMSDEN, *Surgeon, United States Public Health Service*

In the fiscal year ended June 30, 1927, the United States Public Health Service cooperated in demonstration projects in rural health work in 86 counties, or districts comparable to counties, in 18 States, as follows:

Alabama.—Colbert, Franklin, Jackson, Lauderdale, Lawrence, Limestone, Madison, Talladega, and Walker Counties.

Arkansas.—Jefferson and Pulaski Counties.

California.—San Diego and Santa Barbara Counties and San Joaquin district.

Georgia.—Baker, Decatur, Floyd, Glynn, Grady, Laurens, and Walker Counties.

Iowa.—Dubuque County.

Kansas.—Jefferson, Lyon, and Ottawa Counties.

Kentucky.—Mason County.

Louisiana.—La Fourche and Washington Parishes.

Massachusetts.—Cape Cod district.

Mississippi.—Harrison, Hinds, Union, and Washington Counties.

Missouri.—Dunklin, Greene, Jackson, Marion, New Madrid, Nodaway, Pemiscot, Pettis, St. Francois, and St. Louis Counties.

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[1] This report applies to work provided for with funds appropriated specifically for "Special studies of and demonstration work in rural sanitation." It does not include all cooperative activities of the Public Health Service in rural communities.

***Montana.*—Cascade and Lewis and Clark Counties.**

***New Mexico.*—Bernalillo, Chaves, Dona Ana, Eddy, McKinley, Santa Fe, Union, and Valencia Counties.**

North Carolina.—Edgecombe County.

Oklahoma.—Oklahoma, Okmulgee, and Ottawa Counties.

Tennessee.—Anderson, Gibson, Hamilton, Morgan, Obion, Rhea, and Weakley Counties.

Virginia.—Charlotte, Chesterfield, Greensville, Henry, Lee, Prince Edward, Pulaski, Roanoke, Smyth, and Washington Counties.

West Virginia.—Brooke, Boone, Gilmer, Hancock, Harrison, Kanawha, Logan, Marion, Marshall, Preston, Roane, and Wood Coun-

The results were thoroughly in line with the conclusions in the reports on this activity for the fiscal years 1920,[2] 1921,[3] 1922,[4] 1923,[5] 1924,[6] 1925,[7] and 1926.[8]

Plan of Work

The plan of the work was similar to that carried out in each of the six preceding fiscal years. (Reprints Nos. 615, 699, 887, 964, 1047, and 1118.)

The authorization for this work is in the act of February 15, 1893 (ch. 114, 27 Stat. L. 449); the act of August 14, 1912 (ch. 288, 37 Stat. L. 309); and in the annual appropriation acts. The appropriation is specifically for "special studies of and demonstration work in rural sanitation."

The work is conducted in cooperation with State and local health authorities. It is made a part of a well-rounded comprehensive program of local health service.

Through such connection as this with county health service projects the Public Health Service can perform most economically and efficiently its duty toward meeting its responsibility in helping prevent the spread of human infection in interstate traffic. The cooperative projects also furnish most favorable opportunities for studies, by the Public Health Service, "of the diseases of man and conditions influencing the propagation and spread thereof." Thus, this rural sanitation activity serves a number of important general purposes besides those specified in the appropriating act, and though very limited as yet in extent it appears to contribute to the work of the Federal Government for the promotion of the general welfare.

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[2] Reprint No. 615, from Public Health Reports of Oct. 1, 1920, p. 15.
[3] Reprint No. 699, from Public Health Reports of Oct. 7, 1921, p. 17.
[4] Reprint No. 788, from Public Health Reports of Sept 29, 1922, p. 22.
[5] Reprint No. 887, from Public Health Reports of Dec. 14, 1923, p. 24.
[6] Reprint No. 964, from Public Health Reports of Oct. 17, 1924, p. 23.
[7] Reprint No. 1047, from Public Health Reports of Oct. 23, 1925, p. 33.
[8] Reprint No. 1118, from Public Health Reports of Oct. 22, 1926, p. 37.

The demonstration work in rural sanitation can not, under the provisions of the appropriating act, be conducted in a community unless the State, county, or municipality in which the community is located, agrees to pay at least one-half the expenses of such demonstration work. The funds provided by the State, county, and municipalities, inclusive, for support of the average demonstration project far exceed the allotment from the Federal fund, and in almost all instances the appropriation from the local official sources (county, township, or town) covers considerably more than 50 per cent of the budget.

Under this cooperative arrangement the rural sanitation work of the Public Health Service is carried out in each project by a local health force intended to be permanent and is made a part of a general program of rural health work deemed suitable to the locality. Thus, it is accomplished more economically and with more lasting effects from a demonstration standpoint than it could be if undertaken by a specialized force working a comparatively short time in the locality.

The unit for the work, as a rule, is the county, but it may be a group of townships in the same vicinity or two or three adjacent counties. Under the cooperative arrangements a good program of health work can be carried out in practically any rural county or district in the United States at a cost to the county or district easily within its means. The average cooperative demonstration project is conducted on a cost basis of less than 50 cents per capita of population served, and furnishes a striking example of efficiency with economy in public service. In many counties efficient whole-time county health service can be provided at an annual cost of less than $2 to the local taxpayer with real property assessed at $5,000 to $6,000.

An annual budget of $10,000 will provide in most sections of this country the services of a county health department force consisting of one whole-time officer, one whole-time sanitary inspector, one whole-time health nurse, and one office clerk. Such a force can render highly effective health service in the average county with a population of about 25,000 and an area of about 500 square miles. For larger units of population larger forces are needed and should be provided, especially after the first year or two of operation.

The members of the working forces in the cooperative demonstration projects are appointed by the proper local government authorities, but the appointees must be acceptable to the cooperating official agencies—the State board of health and the United States Public Health Service. The only ground upon which the interests of the cooperating agencies are likely to meet with respect to the appointments is fitness for efficient services. With such expressed understanding, the local authorities at times may be relieved of local political embarrassment in exercising their appointing power.

All salient branches of health work, such as acute communicable disease-control measures, sanitation of private homes and public places, malaria prevention, tuberculosis control, goiter prevention, infant and maternity hygiene, venereal disease prevention, school hygiene, etc., are carried out in the projects. Attention is expected to be concentrated upon the different branches of the work in what appears to be the most advantageous sequence. The various activities can be dovetailed with one another so that every dollar invested and every unit of energy expended may yield the biggest possible return in health promotion and disease prevention. The director of the unit, the county or district health officer or sanitary officer, is given full responsibility for the detailed execution of the work. He has from time to time, and can secure at any time, advice and counsel and active assistance from specially experienced representatives of the State board of health and the Public Health Service.

By having all salient branches of health work for the community conducted under the direction of one head, the whole-time county health officer, who is given a status of field agent in the United States Public Health Service, and in some of the States that of deputy State health officer, a maximum of service can be rendered with a minimum of overhead expense, lost motion, and friction. Through good business management, the funds invested in the enterprise can be made to yield a remarkable dividend in the protection and promotion of human health and in a money saving to the community, resulting from the prevention of sickness and loss in wage earning, amounting to many times the cost of the service.

This plan of cooperative rural health work has been evolved in the course of field experience and has been tested under a wide range of local conditions. It seems applicable to all the rural districts of the United States. The provision of means for a reasonably rapid extension of this work would, according to all the evidence, prove highly advantageous from every standpoint—individual, community, State, and national.

Appropriation

The appropriation for the rural sanitation work of the Public Health Service in the fiscal year 1927 was $75,000. Against the amount appropriated was set up a budget saving of $2,000. The unexpended balance from the operations of the preceding fiscal year was $509.91.[9] Thus, $73,509.91 was available.

[9] This balance was due not to an excessive amount of money being available but to temporary suspensions of the work and consequent decreased expenditure in some of the projects to which allotments had been made for the whole fiscal year 1926. Such suspensions are necessitated by various local circumstances and can not be anticipated when the contracts are made. With the existing differences between the Federal fiscal year and the fiscal years of some of the States and localities in which the work is conducted, it would not be practicable, without lessening the degree of economy striven for, to arrange contracts so that the allotment of Federal funds to every project would be expended exactly by the end of the Federal fiscal year.

Rural health work is applicable to communities in the United States comprising about 60 per cent (or over 70,000,000) of our total population. Such communities include open country, incorporated towns and villages (with populations under 2,500), and, as the county is the logical political unit for official rural health-work administration, many towns and cities with populations from 2,500 to 50,000.

Under modern conditions of transportation and travel, rural and urban health conditions react upon each other. Therefore, rural health work is of importance to our entire population. The recent epidemic of typhoid fever in Montreal, Canada,[10] furnished a dreadful example of the relationship of insanitary rural conditions to urban health. The sanitary quality of the tremendous volume of raw foods now shipped daily through interstate traffic is of keen importance, for both humane and business reasons, to our public and our private interests and should be enhanced and safeguarded by reasonably adequate, coordinated, joint activities of governmental agencies—local, State, and Federal. To undertake sanitary control of traffic and travel by inspection and quarantine at our city borders and on our interstate lines now would be futile and ridiculous. The efficient local health department, in doing its local work, performs duty of state-wide and nation-wide importance with which the State and the Federal health services are concerned. Therefore, it seems, from a sanitary standpoint, reasonable and proper for State and Federal agencies to encourage and help in the development and permanent maintenance of such departments.

Only about 17 per cent of our rural population is as yet provided with local health service approaching adequacy under the direction of whole-time, local (county or district) health officers.[11] Because of lack of efficient, whole-time rural health service, infections of man are conveyed very frequently across interstate lines.

In our rural communities there are about 1,000,000 persons incapacitated all the time by illness, much of which is preventable; about 70 per cent of the school children are handicapped by physical defects, most of which are preventable or remediable; about 30 per cent of persons of military age are incapacitated for arduous productive labor or for general military duty, largely from preventable causes; and over 60 per cent of the men and women between 40 and 60 years of age are in serious need of physical reparation, largely as a result of preventable causes. In view of these conditions, there is no room for reasonable doubt about the need for more and better rural health service in this country.

The following table presents the annual death rates from all causes and from certain types of diseases per 100,000 of population

[10] Report of the United States Public Health Service on the Montreal Typhoid Fever Situation. Public Health Reports, vol. 42, No. 29, pp. 1893–1903, July 22, 1927.

[11] Reprint No. 1155, from Public Health Reports of Apr. 29, 1927.

in the rural and the urban districts of the registration area of the United States for the period 1900 to 1924, inclusive. These figures are taken from the Mortality Statistics of the Bureau of the Census. The registration area comprised about 40.5 per cent of our total population in 1900, and about 88.4 per cent in 1924. In these statistics, the term "cities" includes cities with populations of 10,000 or over, and "rural" includes open country and villages, towns, and cities with populations under 10,000.

Death rate per 100,000 in the registration area

Year	Part of registration area	All causes	Typhoid fever	Malaria	Diphtheria	Influenza	Tuberculosis (respiratory system)	Diarrhea and enteritis (under 2 years)
1924	Cities	1,276.7	4.5	0.6	10.9	15.4	76.6	28.3
	Rural	1,089 5	8.6	4.0	8 1	22.9	78.9	26.4
1923	Cities	1,320.0	4.6	0.6	13.3	31.4	81.7	33.3
	Rural	1,150 0	8.7	4.8	11.1	56.8	83.9	30.8
1922	Cities	1,268.2	4.8	0.9	15.6	23.6	83.0	35.1
	Rural	1,096 3	10.0	6.0	14.0	38.3	84.9	29.4
1921	Cities	1,220.7	5.8	0.9	19.3	9.3	84.5	43.3
	Rural	1,080.7	11.9	6.1	16 4	13.3	85.6	39.3
1920	Cities	1,410.0	5.5	0.9	18.9	61.2	102.0	52.2
	Rural	1,190.0	9.6	5.9	12.1	79.3	97.7	35.1
1919	Cities	1,390.0	6.1	0.9	19.0	81.6	115.8	52.0
	Rural	1,190 0	11 8	6.2	11.2	113.2	106.1	36.7
1918	Cities	1,990.0	8.7	0.9	17.7	298.3	143.2	68.6
	Rural	1,630.0	15.4	4.8	10.5	301.1	122.0	48.2
1917	Cities	1,520.0	10.2	1.0	19.6	12.7	139.5	70.2
	Rural	1,300.0	16.2	4.9	12 3	21 9	116.5	52.8
1916	Cities	1,500.0	10.8	0.7	16.6	19.2	134.1	72.1
	Rural	1,290.0	15.6	4.8	11.7	34.5	111.1	53.7
1915	Cities	1,420.0	10.9	0.7	17.6	11.8	136.8	68.8
	Rural	1,230.0	13.4	2.8	12.9	19.9	111.8	44.7
1914	Cities	1,450 0	13.4	0.8	21.0	6.8	139.1	75.7
	Rural	1,230.0	16.9	2.9	13.8	11.1	110.2	50.2
1913	Cities	1,500.0	16.1	1.0	21.7	8.5	139.7	84.9
	Rural	1,270.0	19.6	3.2	14.7	16.2	110.2	59.6
1912	Cities	1,470.0	15.6	1.1	19.6	7.1	141.8	83.6
	Rural	1,240.0	17.0	4.1	15.5	13.1	110.8	49.3
1911	Cities	1,590.0	18.7	1.2	21.5	10.4	150.8	91.3
	Rural	1,340.0	22.2	3.7	15.1	21.3	118.7	55.8
1910	Cities	1,590.0	22.4	1.0	25.7	10.6	155.5	118.0
	Rural	1,340.0	23.3	1.7	15.9	18.4	110.5	77.8
1909	Cities	1,540.0	19.4	1.0	24.4	9.2	154.6	103.6
	Rural	1,300.0	20.9	1.8	15.0	17.7	109.9	66.7
1908	Cities	1,590.0	23.5	1.0	26.7	16.1	162.1	113.2
	Rural	1,330.0	23.2	1.6	16.5	26.6	111.8	74.9
1907	Cities	1,750.0	30.8	1.6	29.3	18.8	176.0	122.4
	Rural	1,400.0	25.1	2.0	18.1	32.1	119.8	68.6
1906	Cities	1,783.4	34.2	2.1	32.7	8.0	184.0	---------
	Rural	1,405.7	28.6	2.7	20.2	13.3	121.9	---------
1905	Cities	1,716.8	22.0	1.8	30.1	13.7	178.5	---------
	Rural	1,430.6	23.0	3.5	15.0	29.4	126.2	---------
1904	Cities	1,789.3	24.0	2.6	38.5	15.7	189.4	---------
	Rural	1,442.6	23.7	3.3	17.5	29.5	131.1	---------
1903	Cities	1,707.3	24.6	2.5	41.5	14.7	179.7	---------
	Rural	1,367.8	24.5	3.7	17.7	24.7	120.7	---------
1902	Cities	1,705.8	25.8	3.7	39.8	7.0	177.4	---------
	Rural	1,337.9	26.9	4.3	17.0	14.6	120.7	---------
1901	Cities	1,890.0	28.5	5.4	52.4	24.2	204.1	---------
	Rural	1,520.0	34.6	7.2	26.5	29.6	138.0	---------
1900	Cities	1,890.0	28.5	5.4	52.4	24.2	204.1	---------
	Rural	1,520.0	34.6	7.2	26.5	29.6	138.0	---------

The death rate from all causes for each year within this period is shown to have been lower in the rural than in the urban population. This fact taken alone suggests that rural life is longer and, in general, healthier than urban life.

The decline in the death rate in this quarter of a century has been greater among the urban than among the rural population. On a basis of 1,000 population, the average annual rates for the first five years and the last five years of the period were as follows:

	1900–1904	1920–1924	Decline
Cities	17.74	13.00	4.74
Rural	14.25	11.25	3.02
Difference	3.49	1.77	1.72

The greater decline in the urban rate probably has been due mainly to the better progress in sanitation and in more efficient health service in the cities with populations over 50,000. The age factor may have operated to some extent because the drift of population from country to city presumably involves the young more than it does the old.

It is important to note that the rural death rate is higher than the urban for malaria and influenza throughout the period, for typhoid fever for the last 16 years, and for tuberculosis of the respiratory tract for the last four years.

The relatively high prevalence of such communicable and preventable diseases in our rural population emphasizes the need of more efficient health service in our rural districts.

The results of efficient health service are in life saving, disease prevention, health promotion, and economic saving. The saving in dollars and cents amounts to many times over the cost of the service. Most of our rural county governments are not disposed to establish reasonably adequate county health service without an offer of financial assistance and competent counsel from some outside agency.

The amounts specifically appropriated by Congress for the rural sanitation work of the United States Public Health Service have been as follows:

Fiscal year—	Amount	Fiscal year—	Amount
1917	$25,000	1923	$50,000
1918	150,000	1924	50,000
1919	150,000	1925	74,300
1920	50,000	1926	75,000
1921	50,000	1927	75,000
1922	50,000	1928	85,000

The total for this activity in the last five fiscal years has been less than one forty-thousandth of the total congressional appropriation and less than 1 per cent of the sum appropriated for all the activities of the United States Public Health Service in the same period.

Expenditures

The expenditures in the fiscal year 1927 totaled $70,471.52. Of this sum, $65,356.09 was expended in allotments for direct support

of cooperative projects in counties or districts, and $5,115.43 was expended for general administration, supervision of local projects, and special studies of the problem of rural sanitation.

With the increasing general interest in whole-time rural health service the demands upon the Public Health Service for cooperation far exceeded the money ($73,509.91) available for allotment. In view of the overwhelming number of insistent and yet thoroughly reasonable requests from State and local authorities for cooperation, extreme care had to be exercised to prevent an overcommitment of the funds. The balance remaining at the end of the fiscal year was $3,038.39.[12]

For the support of the work in the 86 local projects the expenditures from all sources totaled $921,570.02. Of this sum, $65,356.09 was allotted from the rural sanitation funds of the Public Health Service; an aggregate of $774,889.56 was derived from State, county, and municipal governmental sources; and $81,324.37 was derived from other sources, including local health associations, tuberculosis associations, local Red Cross chapters, the International Health Board, and the Children's Bureau of the United States Department of Labor. Thus, this investment of the Federal funds appropriated for rural sanitation work was met with odds of over 13 to 1.

It is both significant and encouraging that organizations entering the public health field to promote or conduct some specialized activity—such as typhoid fever prevention, hookworm control, tuberculosis prevention, trachoma control, malaria control, venereal-disease prevention, school hygiene, or advancement of child and maternity hygiene—realize, as a rule, after practical experience, the advantage of dovetailing their specific activities in with and making them a part of a well-rounded, comprehensive program of local official health service under the immediate direction of a qualified, whole-time local health officer. Such arrangement is obviously in the interest of efficiency with economy in public health-work in our rural districts.

Detailed Data

The expenditures from the different sources for support of the cooperative demonstration projects, the scope, the principal activities, and some of the results of the work are presented in the accompanying tabular statement.

In attempting to measure the efficiency of health service, consideration is to be given to the local conditions—climatic, topographical, geographical, social, economic, and other—under which the work is done, the duration, nature, and scope of the activities, the cost of the service, and the results achieved. The 86 cooperative projects

[12] This balance will be reduced considerably by payment of bills yet to be received for freightage and telegraphing within the fiscal year.

listed in this tabular statement present a wide range of local conditions. From equivalent, well-directed efforts, much larger results are obtainable in one project than in another. Considering the cost of the service, the activities and results reported, and the findings from direct surveys of the situations by representatives of the Public Health Service and the State boards of health concerned, it is apparent that in the fiscal year 1927 some of the projects were highly successful, others were not up to reasonable expectations, and the average was good. In rural health work, as in other business, the personal equation of the director of the unit is, in most instances, the main factor making for success or failure.

A careful, analytical, and comparative study of the data in the table should be of interest to anyone competent to make such a study, and should be of especial interest to existing and prospective whole-time county (or local district) health officers.

Compilation of data, by counties, on cooperative demonstration work in rural sanitation in the fiscal year 1927

Counties (or districts)	Anderson, Tenn.	Baker, Ga.	Bernalillo, N. Mex.	Boone, W. Va.	Brooke, W. Va.	Cape Cod health district, Massachusetts	Cascade, Mont.	Chaves, N. Mex.
Period of work in fiscal year 1927	Jan. 1, 1927, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	Dec 1, 1926, to June 30, 1927	Oct. 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1. 1926, to June 30, 1927	July 1, 1926, to June 30, 1927 [1]
Year of cooperation	First	Third	Third	First	First	Sixth	Seventh	Seventh
A. EXPENDITURES								
1. Rural sanitation fund (P. H. S.)	$324.96	$1,000 00	$287.50	$175.00	$225.00	$2,499.96	$1,200.00	$200.00
2. State	221 08	1,000 00		1,406.49			1,500.00	600.00
3. County	774.79	1,852 10	11,836.13	2,812.98	7,929 37	2,495.48	10,511.03	7,494.45
4. Municipalities						3,463.53	10,511.02	
5. Other agencies				1,406.49	2,300.00			338.29
Total	1,320 83	3,852.10	12,123 63	5,800.96	10,454.37	8,458.97	23,722.05	8,632.74
B. ACTIVITIES								
1. Educational:								
(a) Lectures	21	5	25	129	310	37	20	3
(b) Attendance	844	113	1,025	2,978	7,846	1,785	1,428	125
(c) Bulletins distributed	4,090	2,218	2,184	4,931	1,088	65	40,293	2,475
(d) Newspaper articles	22	46	205	41	47	52	27	2
(e) Circular letters	116	1,431	494	1,808	406	11	3,226	6
(f) Health exhibits		1	1	2	113		484	
2. Sanitary inspections:								
(a) Private premises	933	1,922	2,497	33	137	163	1,014	1,177
(b) Public premises—schools, churches, stores, camps, etc.		371	818	75	212	79	618	392
3. Special inspections:								
(a) Dairies			92		63	1,248	115	154
(b) Other food-producing or food-handling places	40	332	687	4	177	153	185	313
4. Examinations:								
(a) For life extension advice					101			
(b) For marriage license								
(c) For work certificates (children)					5	26		
(d) For lunacy				6			3	3
(e) Of prisoners					10		2	8
(f) Of food handlers			977	1	69	44	5	28
5. Acute communicable disease control:								
(a) Visits to cases, carriers, contacts, or suspects		118	3,288	790	252	311	1,660	683
(b) Cases or carriers quarantined		134	1,667	438	187	304	882	347

6. Venereal disease control:								
(a) Suspects examined		2	16	3	9	5	69	19
(b) Prophylactic treatments								
(c) Curative treatments		12	112		9	3	682	
7. Tuberculosis control:								
(a) Number examined		1	1	5	29	430	82	
(b) Positive		1	1	3	23	16	54	
(c) Negative				2	6	206	28	
(d) Placed in institutions		1					19	
(e) Home visits				27	64	224	149	
8. Persons treated for removal of hookworm		83		4				
9. Persons treated for prevention or cure of goiter				2	1	1		
10. Schick tests							1, 611	
11. Cows tuberculin tested			843		2, 917	750		22
12. Immunization:								
(a) Complete antityphoid inoculations		516	29	791	492	14	185	35
(b) Antismallpox vaccination		645	2, 373	3, 597	1, 521	500	1, 314	459
(c) Complete diphtheria toxin-antitoxin inoculations		65	45		1, 431	36	1, 674	124
(d) Persons treated with antitoxin for immediate protection against diphtheria				9	21	29		84
(e) Persons given antirabic treatment		2	13	1				
13. Child hygiene:								
(a) Prenatal—								
(1) Cases given advice				254	80	44		87
(2) Examinations					13	15		
(3) Office consultations				52	7	28		30
(4) Group conferences				4	14	12		4
(5) Home visits				93	414	114		92
(6) Midwives instructed		6			4			
(b) Infant and preschool—								
(1) Babies and children examined			1	154	347	146	596	175
(2) Office consultations, mothers			1	46	65	24	405	33
(3) Group conferences with mothers				4	40	11	25	1
(4) Home visits				217	230	669	373	368
(c) School—								
(1) Children examined		623	2, 815	1, 264	3, 231	2, 087	6, 783	2, 071
(2) Found defective		390	911	1, 094	2, 166	901	5, 618	585
(3) Defects found		620	914	2, 149	3, 918	1, 080	9, 554	620
(4) Consultations, parents (office and school)		3, 286	2	86	244	320	189	243
(5) Home visits		1, 964	21	81	223	1, 530	143	806
(6) Talks to classes or drills in hygiene		72	91	43	463	199	19	357
(7) Exclusions for communicable disease		99	1, 088	331	281	207	378	210
(d) Nutritional classes—								
(1) Cases attending				5	89			
14. Antimalaria work	(4)	(3)	(5)	(5)	(3)	(5)	(3)	(5)

[1] Project was not operating from Feb. 1 to June 1, 1927.
[3] Considerable.
[4] Little.
[5] None.

Compilation of data, by counties, on cooperative demonstration work in rural sanitation in the fiscal year 1927—Continued

Counties (or districts)	Anderson, Tenn	Baker, Ga.	Bernalillo, N. Mex.	Boone, W. Va.	Brooke, W. Va.	Cape Cod health district, Massachusetts	Cascade, Mont.	Chaves, N. Mex.
Period of work in fiscal year 1927	Jan. 1, 1927, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	Dec. 1, 1926, to June 30, 1927	Oct. 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927
Year of cooperation	First	Third	Third	First	First	Sixth	Seventh	Seventh
B. ACTIVITIES								
15. Laboratory examinations:								
(a) Positive		$47	$287	$46	$9	$135	$159	$159
(b) Negative		109	1,948	44	31	188	1,367	486
Total		156	2,235	90	40	323	1,526	645
C. RESULTS								
1. Sanitary privies installed:								
(a) Septic or L. R. S.								
(b) Water-tight vault	$8					2		
(c) Bucket and box	10					3		
(d) Pit	292	63	101	4	5	46		115
Total	[2] 310	63	101	4	5	51		115
2. Privies restored to sanitary type		27	91	14	23	5	51	354
3. Septic tanks installed	11	5	10			40		32
4. New sewer connections	23	2	456		34		218	453
5. New water connections	26	4	269		30	14	63	426
6. Wells or springs improved	34	66	80	15	17			3
7. Public milk supplies radically improved			28			6		44
8. Public food-handling places radically improved		71	113		18	5	1	
9. Places producing foods for sale radically improved			32		7	2		
10. Dwellings effectively screened against flies and mosquitoes	266	28	589					
11. Stables made sanitary			59	7	14	4		
12. Nuisances corrected	10	54	2,159	1	76	133	783	1,481
13. Convictions for violation sanitary laws			2	5			7	1
14. Nutritional cases improved					58		41	2
15. Corrections of physical defects induced:								
(a) In infants					38		12	3
(b) In preschool children					146	18	6	4
(c) In school children		88	4	91	433	336	2,766	166
(d) In adults					12			3

[2] Sanitary officers' estimate of number of sanitary privies installed in county within 6-month period is 2,000, but only 310 have as yet been inspected in detail and approved by him.

Compilation of data, by counties, on cooperative demonstration work in rural sanitation in the fiscal year 1927—Continued

Counties (or districts)	Colbert, Ala.	Decatur, Ga.	Dona Ana, N. Mex.	Dubuque, Iowa	Dunklin, Mo.	Eddy, N. Mex.	Edgecombe, N. C.	Floyd, Ga.	Franklin, Ala.	Gibson, Tenn.
Period of work in fiscal year 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927
Year of cooperation	Sixth	Fourth	Third	Sixth	Fifth	Fourth	Eighth	Fourth	Fourth	Second
A. EXPENDITURES										
1. Rural sanitation fund (P. H. S.)	$600.00	$1,000.00	$299.75	$300.00	$700.00	$300.00	$987.46	$300.00	$300.00	$300.00
2. State	4,200.00	1,000.00			2,150.00	150.00	3,593.16		2,499.98	4,140.00
3. County	6,114.57	5,492.91	7,129.51	3,159.92	4,173.05	6,020.56	6,008.31	6,637.12	4,339.84	5,900.17
4. Municipalities	3,702.89			14,111.56				2,400.00		
5. Other agencies			698.99	1,300.00	450.00				1,775.00	2,700.00
Total	14,617.46	7,492.91	8,128.25	18,871.48	7,473.05	6,470.56	10,588.93	9,337.12	8,914.82	13,040.17
B. ACTIVITIES										
1. Educational:										
(a) Lectures	133	17	18	45	65	19	26	16	48	184
(b) Attendance	8,094	1,637	656	3,669	3,510	801	3,179	1,596	3,273	7,801
(c) Bulletins distributed	6,177	3,048	570	13,982	4,610	4,233	1,048	28,687	10,930	2,190
(d) Newspaper articles	36	47	39	37	190	225	8	52	24	36
(e) Circular letters	8,390	3,275	548	237	2,115	225	1,999		5,759	
(f) Health exhibits		5			1				1	1
2. Sanitary inspections:										
(a) Private premises	735	549	333	664	622	39	3,079	370	2,649	621
(b) Public premises—schools, churches, stores, camps, etc	704	141	978	529	67	30	1,117	155	224	226
3. Special inspections:										
(a) Dairies	224	9	179	155	12	52	46		24	78
(b) Other food-producing or food-handling places	2,286	5		638		68	1,388		242	312
4. Examinations:										
(a) For life extension advice	247				155		76		108	46
(b) For marriage license	1						146		38	
(c) For work certificates (children)	5						39	276		
(d) For lunacy	24		14		25		21		2	3
(e) Of prisoners	116		14		112	13	45		16	117
(f) Of food handlers	110		7				25		3	
5. Acute communicable disease control:										
(a) Visits to cases, carriers, contacts, or suspects	422	257	3,376	2,455	190	134	481	775	197	222
(b) Cases or carriers quarantined	271	122	1,890	329	51	82	424	174	165	152

Compilation of data, by counties, on cooperative demonstration work in rural sanitation in the fiscal year 1927—Continued

Counties (or districts)	Colbert, Ala.	Decatur, Ga.	Dona Ana, N. Mex.	Dubuque, Iowa	Dunklin, Mo.	Eddy, N. Mex.	Edgecombe, N. C.	Floyd, Ga.	Franklin, Ala.	Gibson, Tenn.
Period of work in fiscal year 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927
Year of cooperation	Sixth	Fourth	Third	Sixth	Fifth	Fourth	Eighth	Fourth	Fourth	Second
B. ACTIVITIES—continued										
6. Venereal disease control:										
(a) Suspects examined	139	70	1	151	57	9	359	59	28	95
(b) Prophylactic treatments										
(c) Curative treatments	327	91	1	477	45	1	846	198	31	656
7. Tuberculosis control:										
(a) Number examined	42	27	2	29	55	3	82	8	56	47
(b) Positive	42	2	2	3	19		41	3	33	15
(c) Negative		25		26	36	1	41	5	17	33
(d) Placed in institutions	4				7		39		6	1
(e) Home visits	231		43	103	79	1	559	170	104	85
8. Persons treated for removal of hookworm		304							13	
9. Persons treated for prevention or cure of goiter				41					1	
10. Schick tests			30				28			
11. Cows tuberculin tested	578		2,964	1,684				590	238	465
12. Immunization:										
(a) Complete antityphoid inoculations	2,101	720	308		8,394	146	1,601	4,164	2,614	7,848
(b) Antismallpox vaccination	298	3,169	980	25	260	445	868	2,352	1,405	202
(c) Complete diphtheria toxin-antitoxin inoculations		881	81	8,208	49	68	583	232	371	376
(d) Persons treated with antitoxin for immediate protection against diphtheria	6	3	82	25			3	40	9	22
(e) Persons given antirabic treatment		10	7	2			7	24	3	
13. Child hygiene:										
(a) Prenatal—										
(1) Cases given advice	70		425	72	120	18	480	113	68	61
(2) Examinations	7			14	17	11	120		2	8
(3) Office consultations	1					2	40		5	
(4) Group conferences	16						114			
(5) Home visits	118	2	424	339		14	578	396	85	115
(6) Midwives instructed	36	18	64			25	132	21	8	
(b) Infant and preschool—										
(1) Babies and children examined	604	70	656	164	141	415	316		350	81
(2) Office consultations, mothers	14	303	96		105		26	97	136	58

(3) Group conferences with mothers	65	12	30			12	195		3	2
(4) Home visits	749	68	2, 960	1, 687	433	59	676	420	572	624
(c) School—										
(1) Children examined	3, 150	2, 227		5, 569	3, 876	2, 252	1, 203	9, 301	3, 110	3, 390
(2) Found defective	1, 605	1, 287		3, 867	2, 991	1, 772	323	2, 660	1, 871	2, 319
(3) Defects found	1, 967	1, 742		6, 367	5, 497	3, 269	329	2, 986	2, 359	3, 977
(4) Consultations, parents (office and school)	27	3, 809	30	2, 414	130	11	68	561	185	4
(5) Home visits	532	290	222	1, 556	35	5		923	434	124
(6) Talks to classes or drills in hygiene		93	24	67	210	58			8	1
(7) Exclusions for communicable disease	41	65	227	221	66		137		24	4
(d) Nutritional classes—										
(1) Cases attending				806						120
14. Antimalaria work	(3)	(3)	(4)	(3)	(5)	(5)	(4)	(4)	(5)	(3)
15. Laboratory examinations:										
(a) Positive	210	481	139	510	67	44	225	58	51	51
(b) Negative	447	659	454	4, 872	91	148	619	53	133	232
Total	657	1, 140	593	5, 382	158	192	884	111	184	283
C. RESULTS										
1. Sanitary privies installed:										
(a) Septic or L. R. S			9				3			
(b) Water-tight vault							3			
(c) Bucket and box							32			
(d) Pit	113	203	52	1	44		52	68	83	393
Total	113	203	61	1	44		90	68	83	393
2. Privies restored to sanitary type	106	26	323	48			80	60	12	5
3. Septic tanks installed	21	17	35	6				26	7	19
4. New sewer connections	75	22	61	219			2	76	23	120
5. New water connections	3	17	77	237			2	122	86	206
6. Wells or springs improved	5	9	23	1		2	35	2	6	
7. Public milk supplies radically improved	7	2	33	27				5		
8. Public food-handling places radically improved		10	66	69			12	8	4	
9. Places producing foods for sale radically improved			34	18			2			
10. Dwellings effectively screened against flies and mosquitoes		44	100				5	61		
11. Stables made sanitary			231	2			150	4		
12. Nuisances corrected	1, 412	301	86	434	27	15	306	238	255	142
13. Convictions for violation sanitary laws	2		3			1		1		
14. Nutritional cases improved	217		614	806	104				171	120
15. Corrections of physical defects induced:										
(a) In infants			10				4		2	
(b) In preschool children	24	434	96		39		12		4	
(c) In school children	366		44	1, 679	231		34	804	389	
(d) In adults	3		11		141					

[3] Considerable. [4] Little. [5] None.

Compilation of data, by counties, on cooperative demonstration work in rural sanitation in the fiscal year 1927—Continued

Counties (or districts)	Gilmer, W. Va.	Glynn, Ga.	Grady, Ga.	Greene, Mo.	Hamilton, Tenn.	Hancock, W. Va.	Harrison, Miss.	Harrison, W. Va.	Hinds, Miss.	Jackson, Ala.
Period of work in fiscal year 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to Mar. 31, 1927
Year of cooperation	Third	Eighth	Second	Eighth	Second	Fifth	Eighth	Fourth	Third	First
A. EXPENDITURES										
1. Rural sanitation fund (P. H. S.)	$374.97	$300.00	$982.50	$190.28	$2,499.96	$924.97	$1,500.00	$525.00	$600.00	$1,080.78
2. State	4,006.05		1,000.00	1,000.00	1,030.50	2,803.39	1,006.18		2,656.93	1,583.02
3. County	4,006.22	14,152.30	1,921.25	4,675.00	10,742.83	3,378.32	21,186.32	11,051.89	10,038.50	3,285.01
4. Municipalities		902.00		7,333.00			791.99		12,204.26	1,050.00
5. Other agencies				4,265.00	1,030.50	958.30		397.49	4,211.92	
Total	8,387.24	15,354.30	3,903.75	17,463.28	15,303.79	8,064.98	24,484.49	11,974.38	29,711.61	6,998.81
B. ACTIVITIES										
1. Educational:										
(a) Lectures	60	93	22	44	130	24	81	214	156	95
(b) Attendance	2,021	3,815	3,024	4,065	23,652	845	11,503	8,602	10,855	8,015
(c) Bulletins distributed	2,563	4,660	2,845	5,940	3,945	8,523	4,817	22,929	5,359	9,860
(d) Newspaper articles	36	31	54	117	117	19	239		78	41
(e) Circular letters	3,004	1,265	1,046	3,675	3	1,787	4,457	12	6,457	1,669
(f) Health exhibits	1		3	9	4			9		1
2. Sanitary inspections:										
(a) Private premises	144	5,686	300	8	5,492	25	12,630	925	7,386	2,889
(b) Public premises—schools, churches, stores, camps, etc	71	193	150	78	402	1	3,464	186	120	264
3. Special inspections:										
(a) Dairies		607	3	129	601		137	34	918	16
(b) Other food-producing or food-handling places	58	809	44		339		9	27	10,823	266
4. Examinations:										
(a) For life extension advice	147	10		52	170		107	5	57	7
(b) For marriage license										
(c) For work certificates (children)		16		1	208	2	1	1		
(d) For lunacy	3			32	18	5	4	12		
(e) Of prisoners	98	2		63	21	97	7	391		
(f) Of food handlers	24	237			67		93		1	
5. Acute communicable disease control:										
(a) Visits to cases, carriers, contacts, or suspects	48	1,394	105	859	548	341	166	610	241	97
(b) Cases or carriers quarantined	34	302	47	205	282	97	1,305	434	204	72

6. Venereal disease control:										
(a) Suspects examined	24	376	1	205	91	33	35	114	114	7
(b) Prophylactic treatments				2		1				
(c) Curative treatments	90	606		2,066	292	26	121	572	116	3
7. Tuberculosis control:										
(a) Number examined	52	111		123	622	9	17	441	94	17
(b) Positive	6	12		58	94	6	9	77	28	12
(c) Negative	46	99		64	528	3	8	364	66	5
(d) Placed in institutions	2			53	70	7		40	3	
(e) Home visits	13	165		234	921	104	10	191	578	46
8. Persons treated for removal of hookworm		116	516		1		94		46	
9. Persons treated for prevention or cure of goiter	5			4			10			
10. Schick tests				35	1,114		8		849	
11. Cows tuberculin tested		389			524		1	13,000		311
12. Immunization:										
(a) Complete antityphoid inoculations	2,998	342	1,185	79	1,155	404	64	324	4,094	1,364
(b) Antismallpox vaccination	289	1,812	1,508	18	1,237	461	53	145	4,265	94
(c) Complete diphtheria toxin-antitoxin inoculations	1,343	2,575	614	19	4,710	649	4		608	
(d) Persons treated with antitoxin for immediate protection against diphtheria		11			20		9			49
(e) Persons given antirabic treatment		1			5	1	25	14	1	3
13. Child hygiene:										
(a) Prenatal—										
(1) Cases given advice	10	67		46	37	189	101	107	82	36
(2) Examinations	3			20	18		17			1
(3) Office consultations	9	8		22	13	100	16	78	8	1
(4) Group conferences										
(5) Home visits	8	49		48	60	79	96	21	126	72
(6) Midwives instructed	3	23			1	11	56	5	650	40
(b) Infant and preschool—										
(1) Babies and children examined	86	97	10	381	137	1,170	1,214	177	954	21
(2) Office consultations, mothers	54	44		68	16	104	145		97	
(3) Group conferences with mothers			2	21	5		1	3	8	4
(4) Home visits	28	223		292	278	237	893	86	269	287
(c) School—										
(1) Children examined	1,273	1,267	2,391	2,587	7,251	2,662	3,354	3,542	1,941	2,454
(2) Found defective	1,139	490	1,491	1,981	3,784	2,147	2,088	2,395	922	1,458
(3) Defects found	1,905	591	2,208	3,146	5,123	3,277	4,925	3,673	1,336	2,006
(4) Consultations, parents (office and school)	67	135	991	68	90	79	674	8	156	26
(5) Home visits	26	940	256	431	587	129	1,611	169	264	24
(6) Talks to classes or drills in hygiene			137	115	32	129		180		3
(7) Exclusions for communicable disease	22	138	27	14	176	88	493	25		2
(d) Nutritional classes—										
(1) Cases attending							43	9		
14. Antimalaria work	[4]	[3]	[3]	[4]	[3]	[4]	[3]	[4]	[3]	[3]
15. Laboratory examinations:										
(a) Positive	76	340	57	942	322	22	54	143	186	49
(b) Negative	114	1,255	68	1,739	346	14	96	143	1,264	33
Total	190	1,595	125	2,681	668	36	150	286	1,450	82

[3] Considerable.

[4] None.

Compilation of data, by counties, on cooperative demonstration work in rural sanitation in the fiscal year 1927—Continued

Counties (or districts)	Gilmer, W. Va.	Glynn, Ga.	Grady, Ga.	Greene, Mo.	Hamilton, Tenn.	Hancock, W. Va.	Harrison, Miss.	Harrison, W. Va.	Hinds, Miss.	Jackson Ala.
Period of work in fiscal year 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1 1926, to Mar. 31, 1927
Year of cooperation	Third	Eighth	Second	Eighth	Second	Fifth	Eighth	Fourth	Third	First
C. RESULTS										
1. Sanitary privies installed:										
(a) Septic or L. R. S.	8	51					277	2		1
(b) Water-tight vault	4						10			
(c) Bucket and box	12									
(d) Pit	12		163		525		322	308	704	173
Total	36	51	163		525		609	310	704	173
2. Privies restored to sanitary type		328	22				719	338	70	140
3. Septic tanks installed		178	9		157		257	4	11	8
4. New sewer connections			74		82		5	6	325	12
5. New water connections			15		113		388	4	14	10
6. Wells or springs improved			36		139			34		6
7. Public milk supplies radically improved		49	2		98		13		39	
8. Public food handling places radically improved		100	32		70		35	40		8
9. Places producing foods for sale radically improved		23	3		8		37			2
10. Dwellings effectively screened against flies and mosquitoes			15		213					53
11. Stables made sanitary					110		44			4
12. Nuisances corrected		72	309		965	29	25	734	386	104
13. Convictions for violation sanitary laws							108			1
14. Nutritional cases improved					32	5	11			
15. Corrections of physical defects induced:										
(a) In infants		9		1		23			918	
(b) In preschool children		72		13	1	24		13	978	
(c) In school children	1	135	22	575	138	355	1,803	48	1,983	56
(d) In adults	1			3						84

Compilation of data, by counties, on cooperative demonstration work in rural sanitation in the fiscal year 1927—Continued

Counties (or districts)	Jackson, Mo.	Jefferson, Ark.	Jefferson, Kans.	Kanawha, W. Va.	La-fourche, La.	Lauder-dale, Ala.	Laurens, Ga.	Law-rence, Ala.	Lewis and Clark, Mont.	Lime-stone, Ala.
Period of work in fiscal year 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	Sept 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927
Year of cooperation	Third	Second	Second	First	Third	Eighth	Sixth	Second	Sixth	Fourth
A. EXPENDITURES										
1. Rural sanitation fund (P. H. S.)	$450.00	$1,500 00	$2,400.00	$250.00	$600.00	$1,074.96	$300.00	$1,249.92	$2,400.00	$300.00
2. State	3,539.96	600 00		2,284.20	1,200.00	2,233 32		1,249.93	300.00	2,499.96
3. County	9,086 77	3,000.00	6,589.34	12,706.03	1,800.00	4,200.00	4,460.00	5,141.37	2,548.56	4,992.45
4. Municipalities	220 96	2,760.00				230.00			2,548.58	
5. Other agencies	1,120.00	4,758.13		1,618 98		6,391.05		1,350.00	300.00	1,542.50
Total	14,417 69	12,618.13	8,989.34	16,859 21	3,600.00	14,129.33	4,760.00	8,991.22	8,097.14	9,334.91
B. ACTIVITIES										
1. Educational:										
(a) Lectures	132	37	8	85	86	101	54	104	14	135
(b) Attendance	14,326	2,322	710	5 361	10,627	6,420	3,790	4,596	1,070	10,996
(c) Bulletins distributed	41,066	3,283	8,574	5,006	423	6,252	550	7,099	2,339	7,655
(d) Newspaper articles	306	31	132	53	4	27	125	54	138	69
(e) Circular letters	17,002	2,294	5,651	1,114	63	8,556	430	391	107	2,317
(f) Health exhibits	1	15	2	4		23	1	2	4	
2. Sanitary inspections:										
(a) Private premises	284	334	20	974		1,112	200	1,133	69	1,248
(b) Public premises—schools, churches, stores, camps, etc	192	61	1	632	196	311	126	365	111	522
3. Special inspections:										
(a) Dairies	44	103		32		94	57		92	18
(b) Other food-producing or food-handling places	3	1,196		83	19	453	86	275	174	930
4. Examinations:										
(a) For life extension advice	52	74		36	69	68	26	3	107	88
(b) For marriage license					2	5	1	1		144
(c) For work certificates (children)	188	2		185		52				11
(d) For lunacy		41	6	3		13	5		2	21
(e) Of prisoners		16	38	381		30	31		6	45
(f) Of food handlers	16	21			29	4	58		25	8

Compilation of data, by counties, on cooperative demonstration work in rural sanitation in the fiscal year 1927—Continued

Counties (or districts)	Jackson, Mo.	Jefferson, Ark.	Jefferson, Kans.	Kanawha, W. Va.	Lafourche, La.	Lauderdale, Ala.	Laurens, Ga.	Lawrence, Ala.	Lewis and Clark, Mont.	Limestone, Ala.
Period of work in fiscal year 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	Sept. 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927
Year of cooperation	Third	Second	Second	First	Third	Eighth	Sixth	Second	Sixth	Fourth
B. ACTIVITIES—continued										
5. Acute communicable disease control:										
(a) Visits to cases, carriers, contacts, or suspects	1,937	646	101	261	162	297	160	135	606	294
(b) Cases or carriers quarantined	828	243	264	384	113	340	63	130	184	62
6. Venereal-disease control:										
(a) Suspects examined	29	538	17	7	3	117	56	1	19	255
(b) Prophylactic treatments	4						45			
(c) Curative treatments	8	825	17		15	202	25		2	444
7. Tuberculosis control:										
(a) Number examined	38	57	8	127	6	32	36	4	27	82
(b) Positive	32	10	1	14	2	13	13	2	18	26
(c) Negative	6	47	7	113	4	19	23	2	9	56
(d) Placed in institutions	14	13		8	1	4	10		8	
(e) Home visits	733	196	16	230	2	154	23	90	81	111
8. Persons treated for removal of hookworm							111	1		3
9. Persons treated for prevention or cure of goiter			4	278	127				151	
10. Schick tests		22							152	
11. Cows tuberculin tested		790	198	4,747		1,054			2,153	765
12. Immunization:										
(a) Complete antityphoid inoculations	63	1,753	12	1,122	1,893	4,790	5,600	2,340	78	4,820
(b) Antismallpox vaccination	5,441	691	638	5,629	423	1,342	3,072	416	188	341
(c) Complete diphtheria toxin-antitoxin inoculations	53	112	1,243	467	2,535	90	2,030		495	189
(d) Persons treated with antitoxin for immediate protection against diphtheria	61	93	4	33		89	64		42	10
(e) Persons given antirabic treatment	104			4		33	92			5
13. Child hygiene:										
(a) Prenatal—										
(1) Cases given advice	109	187	11	838		77	51	180	82	84
(2) Examinations	69	3	1	1	4	5	50		28	38
(3) Office consultations	7	13	1	1		29	52	2	39	15
(4) Group conferences	8		198	35		22	30		35	
(5) Home visits	84	287		338	4	173	38	208	83	112
(6) Midwives instructed	16	72				64	51	3		80

(b) Infant and preschool—										
(1) Babies and children examined	433	176	45	312	20	52	106	2	467	268
(2) Office consultations, mothers	306	145	3	18	37	68	48	4	242	69
(3) Group conferences with mothers	63	10	9	70		34	36		51	8
(4) Home visits	184	776	106	1,619		777	38	563	65	762
(c) School—										
(1) Children examined	1,731	264	3,286	12,911	2,578	1,070	329	2,680	5,362	3,672
(2) Found defective	1,616	201	2,415	9,018	1,997	521	226	1,524	3,848	2,039
(3) Defects found	3,491	314	4,165	14,228	3,191	1,040	237	2,160	6,377	2,370
(4) Consultations, parents (office and school)	419	84	335	128	57	113	79		78	57
(5) Home visits	843	571	166	945	13	561	44	150	181	533
(6) Talks to classes or drills in hygiene	314	59	452	936		8	14		99	13
(7) Exclusions for communicable disease	197	156	184	40	9	7	105		134	48
(d) Nutritional classes—										
(1) Cases attending						2	140		2,594	
14. Antimalaria work	[5]	[4]	[5]	[5]	[4]	[3]	[3]	[4]	[5]	[4]
15. Laboratory examinations:										
(a) Positive	156	304			28	217	337	107	1,004	172
(b) Negative	231	676	14		76	722	653	102	2,441	423
Total	387	980	14		104	939	990	209	3,445	595
C. RESULTS										
1. Sanitary privies installed:										
(a) Septic or L. R. S.	10		2		5		3		12	
(b) Water-tight vault			52							
(c) Bucket and box			6							6
(d) Pit	13	25	23	55	129	172	49	60	3	101
Total	23	25	83	55	134	172	52	60	15	107
2. Privies restored to sanitary type	25	12	148		6	43	81	6	41	
3. Septic tanks installed	74	2	5	4	2	55	13	5	1	
4. New sewer connections	154	76		34	1	111	190	3	31	4
5. New water connections	539		12	36	10	207	185		31	5
6. Wells or springs improved	53	3	18	43		10	33	10	9	16
7. Public milk supplies radically improved	17	12	44	11			20		50	
8. Public food-handling places radically improved	3	34	26	35	17	48	37	15	85	18
9. Places producing foods for sale radically improved	1	3			4		36	1	27	
10. Dwellings effectively screened against flies and mosquitoes		83	16	54			54	3	20	8
11. Stables made sanitary			58	57			19		55	
12. Nuisances corrected	253	119		166	26	218	83	20	37	83
13. Convictions for violation sanitary laws		3	1			1	2			55
14. Nutritional cases improved	1			91	87		143			
15. Corrections of physical defects induced:										
(a) In infants	32			12	13		38			1
(b) In preschool children	48	12		82	16	61	63		42	2
(c) In school children	827	60	515	565	834	644	235	590	84	145
(d) In adults	18	15	7	10	75		71		9	9

[3] Considerable. [4] Little. [5] None.

Compilation of data, by counties, on cooperative demonstration work in rural sanitation in the fiscal year 1927—Continued

Counties (or districts)	Logan, W. Va.	Lyon, Kans.	Madison, Ala.	Marion, Mo.	Marion, W. Va.	Marshall, W. Va.	Mason, Ky.	McKinley, N. Mex.	Morgan, Tenn.	New Madrid, Mo.
Period of work in fiscal year 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to Nov. 30, 1926	July 1, 1926, to June 30, 1927
Year of cooperation	Sixth	Second	Eighth	Second	Fifth	Third	Eighth	Fourth	Second	Sixth
A. EXPENDITURES										
1. Rural sanitation fund (P. H. S.)	$275.00	$1,200.00	$300.00	$600.00	$225.00	$899.96	$300.00	$284.17	$270.80	$600.00
2. State			2,499.96	3,399.99	1,150.00	2,875.00	2,294.10	2,700.00	366.95	1,940.32
3. County	11,166.41	4,480.28	7,999.92	2,611.67	9,781.61	6,404.82	3,391.44	4,451.23	366.95	3,820.00
4. Municipalities			5,891.68	3,217.66						250.00
5. Other agencies		1,800.00	3,790.00	2,334.21		2,449.92	1,894.53			
Total	11,441.41	7,480.28	20,481.56	12,163 53	11,156.61	12,629.70	7,880 07	7,435.40	1,004.70	6,610.32
B. ACTIVITIES										
1. Educational:										
(a) Lectures	104	46	141	114	63	51	30	122	12	87
(b) Attendance	2.558	2,942	7,091	4,427	3,407	4,969	2,946	2,425	820	4,250
(c) Bulletins distributed	3,197	3,710	2,281	5,298	5,170	12,272	4,837	3,366	250	8,250
(d) Newspaper articles	80	64	216	59	198	67	162	30	6	120
(e) Circular letters	105	1,446	3,134	2,372	16	4,455	593	144		2,250
(f) Health exhibits	1	4	1	2	12	2	10	9		
2. Sanitary inspections:										
(a) Private premises	1,687	60	12,067	465	167	154	386	606	852	300
(b) Public premises—schools, churches, stores, camps, etc	392	322	179	233	139		280	163		79
3. Special inspections:										
(a) Dairies		84	167	283	59	91	359	46		1
(b) Other food-producing or food-handling places		121	716	379	145	347	1,378	162		
4. Examinations:										
(a) For life extension advice			109	64				12		225
(b) For marriage license			282							
(c) For work certificates (children)	11		482	34		5	39			
(d) For lunacy	3	14	21	2	4			10		20
(e) Of prisoners	163	52	252	19		19	77	17		245
(f) Of food handlers	56	7	120	177				12		
5. Acute communicable disease control:										
(a) Visits to cases, carriers, contacts, or suspects	565	2,032	346	2,845	299	1,176	155	498		146
(b) Cases or carriers quarantined	591	953	111	912	589	442	46	245		50

6. Venereal disease control:										
(a) Suspects examined	368	29	378	21		219	133	11		100
(b) Prophylactic treatments			2							
(c) Curative treatments	1,797	23	1,927	216		676	731	34		127
7. Tuberculosis control:										
(a) Number examined	81	115	79	23	6	212	292	6		66
(b) Positive	22	23	27	14	6	80	72	3		37
(c) Negative	59	92	52	9		132	220	3		29
(d) Placed in institutions	18	12	2	2	5	33	3			13
(e) Home visits	378	147	252	47	34	103	281	9		45
8. Persons treated for removal of hookworm			1	4						
9. Persons treated for prevention or cure of goiter				3	9		28	2		3
10. Schick tests				182			5			
11. Cows tuberculin tested		192	2,564	1,327		1,242	408	31		
12. Immunization:										
(a) Complete antityphoid inoculations	3,029	671	3,722	37	1,307		279	403		2,726
(b) Antismallpox vaccination	9,123	14	826	5	426	7	219	519		41
(c) Complete diphtheria toxin-antitoxin inoculations	251	681	54	18	1,932	3,002	379			910
(d) Persons treated with antitoxin for immediate protection against diphtheria	10	58	25		321		13			40
(e) Persons given antirabic treatment	2	12		2	5		3			11
13. Child hygiene:										
(a) Prenatal—										
(1) Cases given advice	48	88	131	22		129	92	84		53
(2) Examinations		17	16	2		1	41	6		6
(3) Office consultations		19	30				55	9		27
(4) Group conferences	19							22		
(5) Home visits	15	87	240	18	8		174	224		29
(6) Midwives instructed	15		64		2		15	116		16
(b) Infant and preschool—										
(1) Babies and children examined	422	98	308	440	293	21	1,513	597		320
(2) Office consultations, mothers		77	110	128		37	164	3		165
(3) Group conferences with mothers	34	1	19	9	2		22	18		132
(4) Home visits	1,735	134	881	138	14	2	1,488	835		105
(c) School—										
(1) Children examined	5,724	1,706	5,333	2,168	1,105	74	2,486	5,404		2,498
(2) Found defective	3,695	1,184	2,949	1,092	910	63	1,515	1,983		1,680
(3) Defects found	4,425	2,171	3,933	1,853	1,405	95	2,492	3,715		3,191
(4) Consultations, parents (office and school)	122	263	170	599	129		124	106		245
(5) Home visits	1,724	275	157	186	52	5	1,438	1,329		100
(6) Talks to classes or drills in hygiene	349	133	70	273	19	13	361	199		71
(7) Exclusions for communicable disease	91	160	21	51	3	106	146	333		60
(d) Nutritional classes—										
(1) Cases attending	1				149		591	684		
14. Antimalaria work	(5)	(5)	(3)	(3)	(3)	(3)	(3)	(4)		(3)
15. Laboratory examinations:										
(a) Positive	200	182	1,022	376	83	319	221	38		66
(b) Negative	375	422	3,161	1,130	142	403	433	67		77
Total	575	604	4,183	1,506	225	722	654	105		143

[3] Considerable. [4] Little. [5] None.

Compilation of data, by counties, on cooperative demonstration work in rural sanitation in the fiscal year 1927—Continued

Counties (or districts)	Logan, W. Va.	Lyon, Kans.	Madison, Ala	Marion, Mo.	Marion, W. Va.	Marshall, W. Va.	Mason, Ky.	McKinley, N. Mex.	Morgan, Tenn.	New Madrid, Mo.
Period of work in fiscal year 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to Nov. 30, 1926	July 1, 1926, to June 30, 1927
Year of cooperation	Sixth	Second	Eighth	Second	Fifth	Third	Eighth	Fourth	Second	Sixth
C. RESULTS										
1. Sanitary privies installed:										
(a) Septic or L. R. S.	195						6		1	1
(b) Water-tight vault		7		7						
(c) Bucket and box			45						5	
(d) Pit	86	18	67	38	208	7	19	72	423	10
Total	281	25	112	45	208	7	25	72	429	11
2. Privies restored to sanitary type	418		441	90		71	89	26		
3. Septic tanks installed	4	14	21	5	3	3	1			1
4. New sewer connections	29	109	191			38	108	27		50
5. New water connections	28	116	132	16			144	30		51
6. Wells or springs improved	23	88	29	32	1		60	7	19	
7. Public milk supplies radically improved	11	58	2	42		5	25	1		
8. Public food-handling places radically improved	33	5	6		10	100	1	13		
9. Places producing foods for sale radically improved	9	3	4		18	2				2
10. Dwellings effectively screened against flies and mosquitoes			21				2,885	30	344	30
11. Stables made sanitary	11		4	4				7		
12. Nuisances corrected	215	52	462	219	53	30	343	39	10	
13. Convictions for violation sanitary laws		2	12	12		1	2			
14. Nutritional cases improved	362	34					144	80		90
15. Corrections of physical defects induced:										
(a) In infants				2			32	39		90
(b) In preschool children	26		18	7	3	2	87	47		70
(c) In school children	1,536	417	372	364	1,082	6	491	321		180
(d) In adults		2	4			6	20	11		215

Compilation of data, by counties, on cooperative demonstration work in rural sanitation in the fiscal year 1927—Continued

Counties (or districts)	Nodaway, Mo.	Obion, Tenn.	Oklahoma, Okla.	Okmulgee, Okla.	Ottawa, Kans.	Ottawa, Okla.	Pemiscot, Mo.	Pettis, Mo.	Preston, W. Va.	Pulaski, Ark.
Period of work in fiscal year 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927
Year of cooperation	Sixth	Second	Third	Second	Second	Eighth	Second	Sixth	Fifth	Third
A. EXPENDITURES										
1. Rural sanitation fund (P. H. S.)	$375.00	$300.00	$999.96	$1,999.92	$1,200.00	$1,999.92	$225.00	$571.67	$575.00	$1,999.92
2. State	1,858.33	1,680.00	1,409.78	2,499.96		3,519.96	1,125.00	2,554.81	5,153.61	600.00
3. County	7,577.47	5,080.28	3,102.84	4,719.05	5,689.92	6,810.00	2,614.76	3,000.00	6,946.10	11,134.63
4. Municipalities				179.50				450.00		
5. Other agencies		1,975.00					1,200.00	988.76	1,250.00	
Total	9,810.80	9,035.28	5,512.58	9,398.43	6,889.92	12,329.88	5,164.76	7,565.24	13,924.71	13,734.55
B. ACTIVITIES										
1. Educational:										
(a) Lectures	126	176	3	110	11	163	30	53	502	115
(b) Attendance	5,100	10,915	200	3,920	530	4,943	3,650	2,761	11,856	5,768
(c) Bulletins distributed	12,583	4,514	2,753	10,982	8,716	18,190	5,775	11,750	5,474	1,824
(d) Newspaper articles	106	56	4	67	95	10	40	178	37	53
(e) Circular letters	3,138	312		201	1,460	853	1,013	2,820	2,603	535
(f) Health exhibits		1	2	3	22	4	4	20	2	3
2. Sanitary inspections:										
(a) Private premises	239	1,516	45	935	42	853	192	16	1,757	756
(b) Public premises—schools, churches, stores, camps, etc	132	47	96	1,359	176	1,043	28	104	540	149
3. Special inspections:										
(a) Dairies		57	2	69	8	29		7	49	50
(b) Other food-producing or food-handling places		473	144	155		31			216	1
4. Examinations:										
(a) For life-extension advice	43	91		6	186		80	27		40
(b) For marriage license										
(c) For work certificates (children)		1								3
(d) For lunacy	2	10		4		17	20	7	10	5
(e) Of prisoners	48	33		13	13	28	75	9	15	
(f) Of food handlers		1		3		1		4	49	2
5. Acute communicable disease control:										
(a) Visits to cases, carriers, contacts, or suspects	391	123	145	250	332	289	50	245	236	230
(b) Cases or carriers quarantined	238	130	62	305	328	199	18	160	302	22

Compilation of data, by counties, on cooperative demonstration work in rural sanitation in the fiscal year 1927—Continued

Counties (or districts)	Nodaway, Mo.	Obion, Tenn.	Oklahoma, Okla.	Okmulgee, Okla.	Ottawa, Kans.	Ottawa, Okla.	Pemiscot, Mo.	Pettis, Mo.	Preston, W. Va.	Pulaski, Ark.
Period of work in fiscal year 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927
Year of cooperation	Sixth	Second	Third	Second	Second	Eighth	Second	Sixth	Fifth	Third
B. ACTIVITIES—continued										
6. Venereal disease control:										
(a) Suspects examined	3	124	37	67		156	55	375	22	5
(b) Prophylactic treatments										
(c) Curative treatments		197	1,236	250		916	131	1,492	46	1
7. Tuberculosis control:										
(a) Number examined	22	12	4	83	1	12	15	56	6	21
(b) Positive	3	9	3	35	1	8	7	17	2	10
(c) Negative	19	3	1	48		4	8	39	4	11
(d) Placed in institutions		1		13	4	2	7	5		5
(e) Home visits	30	33	6	126	3	3	36	412	37	37
8. Persons treated for removal of hookworm		8								5
9. Persons treated for prevention or cure of goiter	28						71		244	
10. Schick tests		195								
11. Cows tuberculin tested		11			69		25			2,139
12. Immunization:										
(a) Complete antityphoid inoculations	5	3,656	3,141	946	18	401	4,296	14	1,418	10,147
(b) Antismallpox vaccinations	25	259	1,803	3,486	15	452	194	40	1,319	890
(c) Complete diphtheria toxin-antitoxin inoculations		950	172	26	303		443		1,277	76
(d) Persons treated with antitoxin for immediate protection against diphtheria	7	29	6	18	1	34				2
(e) Persons given antirabic treatment	1	9				23				1
13. Child hygiene:										
(a) Prenatal—										
(1) Cases given advice	24	10		15	6	14	38	36	200	13
(2) Examinations		4		1	1		9	2	3	
(3) Office consultations		8		7	6		16	6	6	1
(4) Group conferences						19			32	
(5) Home visits	46	8		4	24		33	14	424	14
(6) Midwives instructed		3		16						
(b) Infant and preschool—										
(1) Babies and children examined	157	135		26	280	47	131	514	572	88
(2) Office consultations, mothers	157	33		21	409	45	68	438	18	143

(3) Group conferences with mothers		5		10	14		9	20	108	4
(4) Home visits	251	148		50	45	15	180	65	922	117
(c) School—										
(1) Children examined	1,232	3,293	732	4,182	1,726	5,296	1,182	2,674	5,055	2,670
(2) Found defective	996	1,938	513	2,706	1,452	2,382	996	1,203	4,652	1,783
(3) Defects found	2,240	3,124	710	4,208	3,088	6,313	2,349	1,759	7,545	2,103
(4) Consultations, parents (office and school)	12	50		89	415	9	58	217	199	156
(5) Home visits	235	200		177	284		32	175	612	222
(6) Talks to classes or drills in hygiene	43	17		116	251	22	45	196	369	22
(7) Exclusions for communicable disease	76	84	50	303	166	3	13	133	71	63
(d) Nutritional classes—										
(1) Cases attending	85									
14. Antimalaria work	(5)	(3)	(4)	(4)	(5)	(4)	(4)	(5)	(5)	(4)
15. Laboratory examinations:										
(a) Positive	23	91	72	51	14	106	43	240	83	67
(b) Negative	12	174	44	86	36	206	59	288	161	49
Total	35	265	116	137	50	312	102	528	244	116
C. RESULTS										
1. Sanitary privies installed:										
(a) Septic or L. R. S.								1		14
(b) Water-tight vault						4			130	
(c) Bucket and box						373			2	7
(d) Pit		255	49	19		37	36	7	431	60
Total		255	49	19		414	36	8	563	81
2. Privies restored to sanitary type	106	143	23	250		72	5	5		
3. Septic tanks installed	5	4	4	2		2			19	115
4. New sewer connections	50	153		5		39			173	180
5. New water connections	34	96				4			205	333
6. Wells or springs improved	13	23	2	27		2		13	102	9
7. Public milk supplies radically improved		8				2		8	29	
8. Public food-handling places radically improved		89		400		4		28	136	
9. Places producing foods for sale radically improved		7		141		2			48	
10. Dwellings effectively screened against flies and mosquitoes		21							950	
11. Stables made sanitary		65		3		7			130	
12. Nuisances corrected		334	33	365	9	138		5	155	48
13. Convictions for violation sanitary laws		1		9		1			2	18
14. Nutritional cases improved	39	6				2		10	74	
15. Corrections of physical defects induced:										
(a) In infants		1		1		1	9	17	16	3
(b) In preschool children	2	4		2	1		14	23	20	2
(c) In school children	50	635	42	231	510	73	191	727	1,318	1,344
(d) In adults		2		4			13	9	6	20

[3] Considerable. [4] Little. [5] None.

Compilation of data, by counties, on cooperative demonstration work in rural sanitation in the fiscal year 1927—Continued

Counties (or districts)	Rhea, Tenn.	Roane, W. Va.	St. Francois, Mo.	St Louis, Mo.	San Diego, Calif.	San Joaquin, Calif.	Santa Barbara, Calif.	Santa Fe, N. Mex.	Talladega, Ala.	Union, Miss.
Period of work in fiscal year 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1927, to June 30, 1927
Year of cooperation	Second	Second	Fifth	Second	Third	Fifth	Third	Fifth	Eighth	First
A. EXPENDITURES										
1. Rural sanitation fund (P. H. S.)	$649.92	$300.00	$718.00	$600.00	$2,499.96	$999.96	$1,354.14	$300.00	$1,199.91	$150.00
2. State	425.00	1,969.43	2,372.58	3,400.00	300.00	91,714.70			3,239.96	920.10
3. County	1,434.83	3,938.79	2,918.79	13,364 98	40,684.50		7,028.82	4,000.00	5,357.80	1,943.06
4. Municipalities			353.13	370.00			150.00		1,254.31	
5. Other agencies		1,969.49	11,962.23	1,665.00		1,800.00			840.00	920.09
Total	2,509.75	8,177 71	18,324.73	19,399.98	43,484.46	94,514.66	8,532.96	4,300 00	11,891.98	3,933.25
B. ACTIVITIES										
1. Educational:										
(a) Lectures	33	29	26	39	75	63	38	9	59	14
(b) Attendance	967	2,033	2,310	2,430	3,466	5,235	2,835	404	1,138	1,125
(c) Bulletins distributed	2,881	16,309	11,544	16,800	5,501	1,558	418	84	3,013	
(d) Newspaper articles	17	48	71	73	8	324	79	54	41	
(e) Circular letters	310	1,545	878	4,883	407	22,673	1,077	43	2,401	760
(f) Health exhibits		5	5	1	4					
2. Sanitary inspections:										
(a) Private premises	1,568	146	949	989	2,266	3,711	188	343	2,921	7
(b) Public premises—schools, churches, stores, camps, etc.		93	188	207	459	1,569	146	190	568	2
3. Special inspections:										
(a) Dairies		27		43	2,037	6,774	17	57	110	3
(b) Other food-producing or food-handling places	156	39	4	8	1,654	7,118	37	20	1,648	9
4. Examinations:										
(a) For life extension advice				11		5,253			21	
(b) For marriage license									19	
(c) For work certificates (children)		3		97		20		1	53	
(d) For lunacy			4	39	1	6	1	2	7	3
(e) Of prisoners		18		427		297		12	84	44
(f) Of food handlers		19				184		10		
5. Acute communicable disease control:										
(a) Visits to cases, carriers, contacts, or suspects		34	2,640	1,394	3,442	17,777	383	460	268	38
(b) Cases or carriers quarantined		16	820	840	1,813	459	176	483	57	21

6. Venereal disease control:										
(a) Suspects examined		40	95	47	5	1,041	1	10	270	6
(b) Prophylactic treatments										
(c) Curative treatments		50	239	134		9,680	11	6	1,410	
7. Tuberculosis control:										
(a) Number examined		173	69	116	17	217	59		65	
(b) Positive		11	7	86	6	65	20		34	
(c) Negative		162	62	30	11	152	39		31	
(d) Placed in institutions			4	19	3	47	11	1	1	
(e) Home visits		16	262	709	82	689	153		786	2
8. Persons treated for removal of hookworm		1							3	2
9. Persons treated for prevention or cure of goiter								10		
10. Schick tests									3	
11. Cows tuberculin tested		270		140	11,434	1,931		37	580	
12. Immunization:										
(a) Complete antityphoid inoculations		1,399	110	31	108	772		97	1,439	354
(b) Antismallpox vaccinations		934	709	1,374	371	2,008	405	652	794	180
(c) Complete diphtheria toxin-antitoxin inoculations			1,879	292	131	4,140		42	96	952
(d) Persons treated with antitoxin for immediate protection against diphtheria		5		26		68		42	50	
(e) Persons given antirabic treatment		2		22		15		8	26	1
13. Child hygiene:										
(a) Prenatal—										
(1) Cases given advice		10	28	30	44	374	7	9	60	
(2) Examinations		10		21		348	4		56	
(3) Office consultations		11	1	19	1	197	1	3	5	
(4) Group conferences									9	
(5) Home visits			26	225	70	242	10	6	129	
(6) Midwives instructed		4						20	225	
(b) Infant and preschool—										
(1) Babies and children examined		102	407	378	362	4,030	18	26	1,131	137
(2) Office consultations, mothers		79	394		125	1,270	1	13	91	
(3) Group conferences with mothers		2	1	4	52	46			76	3
(4) Home visits		2	348	338	678	10,847	39	13	954	
(c) School—										
(1) Children examined		3,414	5,876	4,077	2,522	10,950	3,452	3,051	3,906	1,022
(2) Found defective		2,403	4,166	3,522	1,771	4,348	871	489	2,810	573
(3) Defects found		4,197	17,825	8,463	2,425	6,608	1,565	980	3,677	1,096
(4) Consultations, parents (office and school)		20	215	385	88	1,079	1,467	64	81	
(5) Home visits		15	703	667	2,122	15,733	1,609	20	188	
(6) Talks to classes or drills in hygiene		105	200	42	344	685	121	19	25	
(7) Exclusions for communicable disease		40	17	172	83	2,435	69	451		
(d) Nutritional classes—										
(1) Cases attending					140					
14. Antimalaria work	(3)	(5)	(4)	(4)	(5)	(5)	(5)	(5)	(5)	(4)
15. Laboratory examinations:										
(a) Positive		70	235	223	52	1,192	16	21	296	13
(b) Negative		71	669	142	736	4,338	40	26	620	27
Total		141	904	365	788	5,530	56	47	916	40

[3] Considerable. [4] Little. [5] None.

Compilation of data, by counties, on cooperative demonstration work in rural sanitation in the fiscal year 1927—Continued

Counties (or districts)	Rhea, Tenn.	Roane, W. Va.	St. Francois, Mo.	St. Louis, Mo.	San Diego, Calif.	San Joaquin, Calif.	Santa Barbara, Calif	Santa Fe, N. Mex.	Talladega, Ala.	Union, Miss.
Period of work in fiscal year 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927
Year of cooperation	Second	Second	Fifth	Second	Third	Fifth	Third	Fifth	Eighth	First
C. RESULTS										
1. Sanitary privies installed:										
(a) Septic or L. R. S.		12							1	
(b) Water-tight vault			2	8						
(c) Bucket and box									20	
(d) Pit	557	39	19	10			11	23	123	4
Total	557	51	21	18			11	23	144	4
2. Privies restored to sanitary type	194	2	97	70			16	80	98	
3. Septic tanks installed	6	7	14	70	508		9	4	4	
4. New sewer connections	52	19	23	151	1,707	667	52	27	10	
5. New water connections	3	4	37	119	1,707	532		28	19	
6. Wells or springs improved	30	34	7	67	14		4	3	6	2
7. Public milk supplies radically improved		8		12				17	3	
8. Public food-handling places radically improved	6	17	5		200		5	18	18	
9. Places producing foods for sale radically improved		16						4	7	
10. Dwellings effectively screened against flies and mosquitoes	5	5						4	10	
11. Stables made sanitary		3		13			1	68	137	
12. Nuisances corrected	17	45	73	570	33	652	31	186	245	
13. Convictions for violation, sanitary laws				2		3			4	
14. Nutritional cases improved			107	36	124		2	1		
15. Corrections of physical defects induced:										
(a) In infants		1	2	13	3	14	2		7	
(b) In preschool children		2		11	13	49	1	1	13	
(c) In school children		178	1,187	162	310	1,215	223	10	264	273
(d) In adults		6		71	22	609	4	1		

Compilation of data, by counties, on cooperative demonstration work in rural sanitation in the fiscal year 1927—Continued

Counties (or districts)	Union, N. Mex.	Valencia, N. Mex.	Walker, Ala.	Walker, Ga	Washington, La.	Washington, Miss.	Weakley, Tenn.	Wood, W. Va.	10 Virginia counties	Total
Period of work in fiscal year 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	Nov. 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	
Year of cooperation	Seventh	Fourth	Eighth	Eighth	Sixth	Fourth	Second	First	First to ninth	
A. EXPENDITURES										
1. Rural sanitation fund (P. H. S.)	$275.00	$300 00	$898 66	$1,740 00	$2,100.00	$1,350.00	$300.00	$200.00	$3,716.25	$65,356.09
2. State	150.00	445.00	1,875 00		2,000.16	649 32	1,947.50	3,291.94	10,015.95	213,798.56
3. County	5,262.88	6,024 29	4,785.51	4,937 19	2,822 08	3,899.71	3,778.31	3,693.99	14,025.25	480,694.61
4. Municipalities					1,320 32	2,730.00		2,000.00		80,396.39
5. Other agencies		550 00	1,775 00			700.00	2,547.50			81,324.37
Total	5,687.88	7,319.29	9,334.17	6,677.19	8,242.56	9,329 03	8,573.31	9,185.93	27,757.45	921,570.02
B. ACTIVITIES										
1. Educational:										
(a) Lectures	27	93	117	93	62	240	285	156	396	6,708
(b) Attendance	725	4,813	4,436	5,405	6,078	5,625	11,522	15,250	30,354	378,604
(c) Bulletins distributed	405	2,652	1,060	3,266	19,894	3,559	2,640	4,130	12,820	526,263
(d) Newspaper articles	21	9	31	15	21	96	29	240	141	5,683
(e) Circular letters	500	582	74	572	2,001	1,225	643	544	2,055	161,899
(f) Health exhibits	4	7		1	1		6	6		830
2. Sanitary inspections:										
(a) Private premises	241	219	1,938	2,501	5,447	9,882	462	630	16,891	132,790
(b) Public premises—schools, churches, stores, camps, etc.	129	314	192	161	283	2,116	211	485		26,956
3. Special inspections:										
(a) Dairies	11	5	109	319	373	10	46	144		16,782
(b) Other food-producing or food-handling places	100	26	354	72	83	1,217	898	547	2,223	41,105
4. Examinations:										
(a) For life extension advice	1		97		72	10				8,259
(b) For marriage license			117		2					758
(c) For work certificates (children)		6	50	67				53		1,943
(d) For lunacy	19	50	50				7	13		626
(e) Of prisoners	15	11	72				16	246		3,999
(f) Of food handlers	21		84	14	70			1,074		3,760
5. Acute communicable disease control:										
(a) Visits to cases, carriers, contacts, or suspects	2,226	1,146	491	239	129	190	165	109		66,097
(b) Cases or carriers quarantined	747	168	400	48	78	64	164	109		25,378

Compilation of data, by counties, on cooperative demonstration work in rural sanitation in the fiscal year 1927—Continued

Counties (or districts)	Union, N. Mex.	Valencia, N. Mex.	Walker, Ala.	Walker, Ga.	Washington, La.	Washington, Miss.	Weakley, Tenn.	Wood, W. Va.	10 Virginia counties	Total
Period of work in fiscal year 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	Nov. 1, 1926, to June 30, 1927	July 1, 1926, to June 30, 1927	
Year of cooperation	Seventh	Fourth	Eighth	Eighth	Sixth	Fourth	Second	First	First to ninth	
6. Venereal disease control:										
(a) Suspects examined	27	12	93	3	3	59	3	410		7,382
(b) Prophylactic treatments		11	2					41		108
(c) Curative treatments	1	1	96	10		67	20	1,180		31,626
7. Tuberculosis control:										
(a) Number examined	11	9	47	23	15	61	14	36	160	5,006
(b) Positive	5	3	24	2	8	54	3	1		1,399
(c) Negative	6	6	23	21	7	7	11	35		3,231
(d) Placed in institutions		2				3		2		527
(e) Home visits	7	62	112	32	34	189	33	42		10,966
8. Persons treated for removal of hookworm			78		117					1,511
9. Persons treated for prevention or cure of goiter		234						104		1,361
10. Schick tests							2,047	8		6,289
11. Cows tuberculin tested			573	1,898	1,097		5	175	3,116	64,247
12. Immunization:										
(a) Complete antityphoid inoculations	28	26	1,690	1,903	2,149	49,075	4,368	2,026	937	167,164
(b) Antismallpox vaccination	433	668	11,141	13	621	1,491	763	189	2,936	98,812
(c) Complete diphtheria toxin-antitoxin inoculations	6	80		660	843	577	1,546		5,317	58,995
(d) Persons treated with antitoxin for immediate protection against diphtheria		3	123		33	23				1,755
(e) Persons given antirabic treatment			49	3		1				558
13. Child hygiene:										
(a) Prenatal—										
(1) Cases given advice	2	103	103	9	81	86	41	261		6,407
(2) Examinations		8	1		36			281		1,339
(3) Office consultations	21	101	4	21	65		1	63		1,283
(4) Group conferences			31		8			6		638
(5) Home visits		107	184	18	137	78	45	46		7,255
(6) Midwives instructed	5	31	2		4	115	3	4		2,049
(b) Infant and preschool—										
(1) Babies and children examined	63	414	119	50	221	14	48	169		23,995
(2) Office consultations, mothers	14	45	23	101	167			20		7,231
(3) Group conferences with mothers	7		36		27		3			1,389
(4) Home visits	202	328	386	37	306	109	367	23		39,688

(c) School—										
(1) Children examined	286	1,888	2,518	1,300	781	2,035	1,145	1,345		219,665
(2) Found defective	181	287	1,427	702	636	1,531	805	164		132,087
(3) Defects found	272	412	2,192	933	1,043	1,846	1,291	275		224,930
(4) Consultations, parents (office and school)	17	99	13	42	432	216	3	75		22,512
(5) Home visits	32	233	70	210	365	784	333	78		47,698
(6) Talks to classes or drills in hygiene	12	111			46	29	80	57		8,641
(7) Exclusions for communicable disease	644	236		29	42	39	12	92		11,538
(d) Nutritional classes—										
(1) Cases attending					95	78		3		5,629
14. Antimalaria work	(5)	(5)	(3)	(5)	(4)	(3)	(4)	(5)	(3)	
15. Laboratory examinations—										
(a) Positive	26	7	452	44	328	191	52	126		13,835
(b) Negative	149	19	336	82	339	1,782	113	385		39,490
Total	175	26	788	126	667	1,973	165	511		53,325
C. RESULTS										
1. Sanitary privies installed:										
(a) Septic or L. R. S.	1							9	9	633
(b) Water-tight vault										237
(c) Bucket and box			85		44			45	123	818
(d) Pit	8	17	276	141	727	695	68		1,315	10,346
Total	9	17	361	141	771	695	68	54	1,447	12,034
2. Privies restored to sanitary type	144	35	655	109	687	686	11	85	1,684	9,596
3. Septic tanks installed		1		61	23		5		379	2,308
4. New sewer connections			14	61	76	151		12	340	7,386
5. New water connections			20	45	72				745	7,680
6. Wells or springs improved	17	11	19		8		4	110	273	1,767
7. Public milk supplies radically improved	5		2		7			218		970
8. Public food handling places radically improved	30	3	15		4	357	3	324	372	3,182
9. Places producing foods for sale radically improved	2		16		14	16		168		719
10. Dwellings effectively screened against flies and mosquitoes	1	6	95	137	24	84			380	6,643
11. Stables made sanitary	7							6		1,284
12. Nuisances corrected	73	84	147	278	8	4,182	16	530	848	22,070
13. Convictions for violation sanitary laws			4							266
14. Nutritional cases improved		5			65	432				4,116
15. Corrections of physical defects induced:										
(a) In infants		60	8							1,437
(b) In preschool children		88	7			30		101		2,854
(c) In school children	82	157	23	99	428	1,257				32,354
(d) In adults	1	5				1				1,507

[3] Considerable. [4] Little. [5] None.

The Cape Cod Project

The cooperative rural health work begun in May, 1921, under the direction of a whole-time district health officer in a group of the 15 towns (townships) in Cape Cod, Mass.,[13] continued on its original basis to January 1, 1927, when, under a special act of the Massachusetts Legislature, the local health service was organized on a county basis and became operative as the Barnstable County Health Department, under the direction of a whole-time county health officer.

In the period of over five and a half years of service on the district plan the number of towns participating in the project was each year 10 or 11. The appropriations for health service in the towns participating were pooled into one fund, and the same person was appointed health officer for each of the towns. In order for a town to be included or to continue for another year in the combination, its board of selectmen had to obtain authorization from the citizens under a practically unanimous consent agreement at a town meeting. The citizens realized that the cooperative district plan provided, at small additional cost, more and better health service than they had obtained previously from their town unit part-time health service. Therefore, they continued to support the district plan until a better arrangement could be made. Such district plan, with its demonstrated success on Cape Cod, seems applicable to those States in which the town, township, or borough, instead of the county, is the rural unit of local government with respect to public health administration.

The establishment of the whole-time health service on a county unit basis simplifies administration, enhances satisfactory coordination of all local health activities, and presents other practical advantages. The appropriation made by the county commissioners for the support of the Barnstable County Health Department in the calendar year 1927 is $8,500, as against $5,840 provided by the 10 towns included in the Cape Cod Health Bureau district for health service in the calendar year 1926.

Barnstable County, Mass., is the first county in New England to establish a county health department. The precedent is of historic interest and is expected to prove of both local and far-reaching practical importance.

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[13] Reprint No. 699 from Public Health Reports of Oct. 7, 1921, pp. 11, 12; Reprint No. 788, from Public Health Reports of Sept. 29, 1922, p. 14; Reprint No. 887, from Public Health Reports of Dec. 14, 1923, p. 16; Reprint No. 964, from Public Health Reports of Oct. 17, 1924, p. 18; Reprint No. 1047, from Public Health Reports of Oct. 23, 1925, p. 27; and Reprint No. 1118, from Public Health Reports of Oct. 22, 1926, p. 31.

Sanitary Officer Projects in Virginia and Tennessee Counties

The plan of special demonstration work in rural sanitation inaugurated in Virginia in the fiscal year 1920 was carried out in 10 counties [14] in that State and in three counties [15] in Tennessee in the fiscal year 1927. This plan, which is described in previous reports,[16] continues to prove highly successful. It meets remarkably well the situations in rural counties in which effective health work, if done at all, must be done on a low-cost basis, and in which outdoor sanitary measures are especially needed. The cost for such service in the average county is about $2,750 a year. The county sanitary officer is engaged on a whole-time basis. He does not have to be a graduate in medicine or engineering, but he must be a trained, practical sanitarian. Along with his sanitary work, he carries out, with the active cooperation of the local physicians, most of the other activities expected of a whole-time county health officer with a medical degree.

The results accomplished in the county sanitary officer projects become more impressive from year to year. Some of these counties are now among the foremost in the list of rural counties in the United States presenting high-grade demonstrations in sanitary progress.

This county sanitary officer plan, after eight years of testing, appears to offer to the counties to which it is appropriate as large a return on the investment for county health service as any other yet tried or proposed.

The following excerpts from a report submitted by Scientific Assistant Geo. S. Bote, who, as a representative of both the Public Health Service and the Virignia State Board of Health, had supervision of the county sanitary officer projects in Virginia during the fiscal year 1927, are indicative:

The sanitary officer plan of health work was started in Virginia, through the cooperation of the United States Public Health Service with the State board of health, in 1919. It has been in continuous operation since its inception and the service has allotted funds and furnished personnel to assist the State board of health in promoting and developing it. It was devised to provide full-time health service at small cost for those counties of the State in which the assessed values were low and in which no organized health work was being carried on.

It has worked admirably in Virginia and has been the means of starting full-time health work in rural counties many years sooner than would have otherwise been the case. So, to-day, because of this economical arrangement, we find that the people in these counties have a trained sanitary officer to care for their

[14] Charlotte, Chesterfield, Greensville, Henry, Lee, Prince Edward, Pulaski, Roanoke, Smyth, and Washington.

[15] Anderson, Morgan, and Rhea.

[16] Reprint No. 615, from Public Health Reports of Oct. 1, 1920, pp. 10, 12; Reprint No. 699, from Public Health Reports of Oct. 7, 1921, pp. 12, 14; Reprint No. 788, from Public Health Reports of Sept. 29, 1922, pp. 14, 17; Reprint No. 887, from Public Health Reports of Dec 14, 1923, pp. 16, 18; Reprint No. 964, from Public Health Reports of Oct. 17, 1924, pp. 18, 21; Reprint No. 1047, from Public Health Reports of Oct. 23, 1925, pp. 27, 28; Reprint 1118, from Public Health Reports of Oct. 22, 1926, pp. 31, 32.

fundamental health needs in a systematic and efficient manner, and at a cost which is well within the means of even the smallest county. The money invested in the employment of a sanitary officer continues to give a high return on the investment and has brought about a reduction in the general mortality rate in those counties operating under this plan.

EXPANSION OF WORK

At the beginning of this fiscal year nine counties were in operation under the sanitary officer plan. During the year, financial arrangements were completed in Lee County and activities began there on January 1, 1927. This increased the number in operation to 10 counties for the latter half of the year.

Further expansion is assured for next year when two more counties will be added to the group. Appropriations for this purpose have already been made available in Essex and Fairfax Counties, and arrangements have been perfected for the work to start July 1, 1927.

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ACTIVITIES

The statistical sheet, which is attached hereto, shows in detail the activities carried on and the results accomplished during the year in the 10 counties. From a study of this summary it can be seen that a wide field of endeavor has been covered, and that excellent results have been obtained. The major activities, however, have been directed toward securing sanitary excreta disposal, safe water supplies, clean milk, and screened homes. Some work on mosquito control was done in practically all of the counties.

SANITARY EXCRETA DISPOSAL

Progress has been made in the sanitation of the homes, schools, stores, dairies, and business places located in these counties. During the year, 1,447 places were provided with sanitary privies of various types, 369 of these being homes which never before had a toilet of any kind. The resanitation of many homes was accomplished, and 1,684 privies of sanitary type, which had become insanitary after years of usage, were fixed over and again restored to a sanitary condition.

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In addition to the sanitary privies, 379 septic tanks were built to care for the sewage from homes provided with running water and inside plumbing fixtures. These septic tanks, with adequate subsoil drainage systems, took the place, in many instances, of open sewers and overflowing cesspools.

In the privy-construction work this year each sanitary officer has endeavored to build a better type of sanitary toilet. The double-wood slab and the concrete-slab type of privies have been installed in greater numbers than ever before. The need for more durable and lasting construction is clearly indicated by the number of sanitary privies which needed repairing during the year.

NEW-TYPE PRIVY SEAT LID

The new-type privy seat lid, which was designed several years ago for the purpose of eliminating the moisture of condensation on the privy seats, has been thoroughly tested. It has proved a valuable adjunct to the sanitary equipment. It has been widely used by the sanitary officers throughout the State. In addition to 2,500 such lids which were distributed at one time, many local carpenters have copied the model and made the lids locally. Reports received in response to inquiries show that the lid is effective in preventing the moisture of condensation.

CONCRETE-SLAB PIT PRIVY

Further experimenting was done in the manufacture of the concrete slab. During the year the sanitary officer of Prince Edward County conceived the idea of making the slabs at a central point and hauling them to the homes. He also decided that slabs made of cinder concrete would be practicable. He selected a site, had forms made, and proceeded with the experiment.

The material used in making each slab was 1½ bags of cement and 10 shovels of sand mixed with cinders, which would pass through a half-inch mesh screen. The slabs were made 3 inches thick, 4½ feet wide by 5½ feet long, and were reinforced with iron rods and fencing wire. Six slabs were poured at one time. They were allowed to cure or set up for seven days, when they were hauled to the place at which they were to be installed. They were handled rather roughly and so far there has been no breakage. With this experience it is evident that a cinder-concrete slab 3 inches thick is practicable and has sufficient strength for this class of work. It weighs about one-third less than concrete made with the usual mixture of gravel, stone, and sand. This makes it much easier to handle and transport. The actual cost of material and labor with wooden-seat riser, lids, and ventilator is $4.50 at the place of manufacture. A local drayman moves the slabs from the plant to the homes for $1 each.

In Chesterfield County two small schools, which were equipped with concrete-slab privies, were discontinued in the school consolidation program. The central school needed sanitary toilets and the question arose as to whether it would be cheaper to build new toilets or move the concrete slabs from the schools which had been abandoned. The county sanitary officer advocated moving the toilets to the new location. A truck with trailer was secured and the privies and slabs were moved a distance of 7 miles and installed over new pits at a cost of $10 per privy.

This further demonstrates the economy of this particular type of sanitary privy and shows that the slabs can be moved without breakage or excessive cost. The concrete slab has so many advantages over the wood cover—especially with respect to maintenance—that it should be advocated and used by preference whenever practicable.

SEWER EXTENSIONS AND CONNECTIONS

The total number of feet of sewer extension for the year is 15,985, and the number of sewer connections is 340.

In Roanoke County rather unique methods were used by the sanitary officer for securing sewer extensions. In the town of Vinton he created interest to the extent that the property owners paid one half the cost and the town the other half in building a line 1,623 feet long. Two other extensions just outside the corporate limits of South Salem were built under his direction. He did the engineering work, purchased the material, and supervised the laying of the pipe, the property owners paying all costs. The combined length of these two lines was 709 feet and they accommodated 23 homes. In the town of Salem 10,433 feet of new lines have been laid, and the homes are being connected as fast as the lines are ready for service. These extensions made possible 120 sewer connections, most of which were substituted for sanitary privies of the box and can type.

In the town of Farmville, in Prince Edward County, 630 feet of new sewer mains were laid and 23 sewer connections secured. The town council has authorized the laying of 600 feet more.

In the town of Martinsville, in Henry County, 2,370 feet of new sewer mains were put down and 43 homes joined up.

In Emporia, in Greensville County, 220 feet were laid, and this line takes care of seven homes which had previously been served by box and can privies.

The town of Pulaski, in Pulaski County, has recently passed a bond issue for $60,000 to be used for sewer extensions. It is estimated that this will provide sufficient funds for laying about 5 miles of sewer lines in the town. When this project is completed, it will be possible for more than 80 per cent of the homes in Pulaski to secure a sewer connection.

WATER SUPPLIES

The protection and improvement of the water supplies has occupied a considerable amount of the time of the sanitary officers. They have given attention to both municipal and individual supplies. As a routine procedure they make frequent inspection of the municipal and community supplies and collect samples for examination. In the course of their visits to the homes they have been able to induce a number of improvements to the individual supplies. The tabulation sheet shows 745 water connections, 98 new wells, 80 old wells improved and rendered sanitary, 80 open springs protected, and 15 cisterns built. This makes a total of 1,018 places which have been provided with a safe water supply during the year and is a very noticeable increase over previous years.

Due to the drought it was necessary for the town of Pulaski to supplement its regular water supply. After considering several available sources it was decided to use the South Fork of Peak Creek and pump the water directly into the mains. Under the supervision of the sanitary officer a chloride-of-lime treatment plant was set up, and this was operated under his direction throughout the time the auxiliary supply was used. The old reservoir went completely dry for a few days, and it was necessary to pump all the water used in Pulaski from Peak Creek. No outbreaks of typhoid or dysentery occurred following the use of this water, which indicates that the sterilization process was effectively carried out. The dam at the old reservoir has since been raised, and it now has a storage capacity of 256,000,000 gallons of water. It is thought that this will remedy the situation and there will be no further water shortage in Pulaski for many years to come.

Three water-main extension projects were completed in Roanoke County. The total footage was 2,682 feet, of which 557 feet were laid in Salem, 462 feet in Vinton, and 1,663 feet in the county outside town or city limits. As a result, 318 water connections were made and this number of homes have been provided with pure drinking water. Samples collected from the water supply for South Salem showed that it was polluted. The sanitary officer immediately installed a chlorinated-lime treatment plant, and subsequent samples have been found excellent on bacteriological examination.

In October a bond issue for $75,000 was passed by the voters of Farmville, in Prince Edward County, for improvements to the present water system. These include a wash-water tank, a new intake line, a new standpipe, and three-quarters of a mile of 10-inch mains. The filters at the Farmville water plant were recently overhauled and rebuilt under the direction of the sanitary officer. This required one week of his time, but when it is considered that one out of every four persons in the whole county uses the Farmville water the importance of this work is at once realized. He also looked after the water supply at Hampden-Sidney College. Here he had repairs made to the chlorinator and supervised the cleaning of the filter several times during the year. In addition to the students, about 500 residents use the college water supply.

A bond issue of $70,000 was carried in Martinsville, in Henry County, to enlarge the present water system. The new source of supply is at Beaver Creek, about 1½ miles north of town. This has necessitated the laying of several miles of new mains, the building of additional filters, and the installation of a large pump for forcing the water into the standpipe.

The commercial concerns selling bottled spring water have not been neglected. Inspections are made regularly to collect samples and to see that the bottles are properly washed and sterilized. These plants distribute many thousands of gallons of water, some of it being shipped to distant communities.

MOSQUITO CONTROL

Mosquito-control work consisted of drainage, oiling, screening, and the stocking of ponds with *Gambusia* top minnows.

In Emporia, in Greensville County, a seepage area of 2 acres and 6½ miles of drainage ditches were kept under control. A weekly oiling schedule was maintained, and 613,480 feet of ditches were oiled. It required 1,770 gallons of oil for this work. During the year 52,356 feet of ditch cleaning was done to keep the ditches free from obstructions. The fund for this work was provided by an appropriation of $720 by the town council of Emporia.

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A very successful county-wide screen-up campaign was inaugurated in Greensville County in April and continued throughout the summer months. Dealers selling screen wire were interviewed, and it was learned that during this time they had sold 17,500 feet of screen wire, 180 ready-made window screens, and 193 screen doors. In addition to this, one of the lumber mills reported the sale of 12,000 lineal feet of screen molding, which is used in the making of screen doors and windows.

One large drainage project was completed in Greensville County through the coöperation of the board of supervisors and the State highway commission. A canal six feet wide, with an average depth of 3½ feet, and 1,422 feet in length was dug through Metcalf Swamp, which is located within half a mile of North Emporia. This canal drained about 50 acres of land, which has been a favorable breeding place for mosquitoes for a number of years. This is about one-fourth of the ditching which is necessary to completely drain this swamp. The cost of this project was $400.39, and the work was done under the supervision of the sanitary officer.

In Farmville, in Prince Edward County, the sanitary officer had 1,000 feet of ditches dug and drained a bad mosquito breeding place in the residential section of town.

The sanitary officer in Chesterfield County removed a mosquito nuisance in three instances by stocking that number of ponds with *Gambusia* top minnows. In three other cases he accomplished the same results by inducing the digging of 2,360 feet of ditches, which drained some stagnant pools.

In Charlotte County, 300 feet of ditches were dug to drain a pond on the property of the Southern Railroad at Keysville. Mosquitoes had become a pest in that community and dippings showed the pond to be the breeding place.

During the year, 380 dwellings were completely screened and many times this number were partially screened.

MILK SUPPLIES

The milk supply in these counties is slowly being improved from year to year. The standard milk ordinance is in force in two towns, namely, Abingdon, in Washington County, and Pulaski, in Pulaski County.

Marked improvement is noted in the dairies furnishing milk to the town of Pulaski. During the year, two modern dairy barns were built. One of the

"A" grade dairies was equipped with a milking machine and another installed a bottling machine. One "C" grade dairy made the necessary improvements to raise it to grade "A." During the year Mr. LeFevre, associate milk specialist of the Public Health Service, made an inspection of all the dairies supplying milk to Pulaski and scored them according to the standard milk ordinance. After completing his work he made the following statement to the mayor of Pulaski: "The public may rest assured that when they buy grade milk 'A' produced in the Pulaski dairies they are getting really clean milk."

In other counties the provisions of the local milk ordinances were enforced. The chief efforts of the sanitary officers have been to procure a clean milk supply. During the year, 3,116 dairy cows were tested for tuberculosis and all reactors found were excluded from the herds.

SWIMMING POOLS

The construction of new swimming pools has lessened during the year, only two new pools being reported under construction. One of these is in the town of Martinsville and is for the accommodation of the colored bathers. The water for this pool will be secured from the town of Martinsville. The other pool is in Pulaski County located about 5 miles from the town of Pulaski. This will be equipped with shower baths, flush toilets, and a septic tank. The water will be treated with chlorine at regular intervals so as to insure its purity.

As in the past, the sanitary officers have assisted the owners in maintaining good sanitation at all swimming pools within their counties. Samples of water are collected at regular intervals and inspection is made to see that proper sanitation is maintained and that the bathing suits are sterilized after each using. The owners of these places welcome such inspection and also suggestions from time to time.

*   *   *   *   *   *   *

SMALLPOX CONTROL

No serious outbreak of smallpox occurred in any of the counties. The presence of smallpox was utilized by the sanitary officers in working up vaccination clinics in the communities in which the disease occurred. In this work they had the cooperation of the local physicians, who did the vaccinating. These clinics, together with the individual contacts vaccinated, resulted in 2,936 vaccinations. The usual control measures of quarantine, search for contacts, and terminal disinfection were carried out in all cases reported.

TYPHOID FEVER PREVENTION

Sanitation was advocated throughout the year as the best means of preventing typhoid fever. On receiving a report of the presence of a case of typhoid fever, the sanitary officer at once proceeded to make an investigation, trace the source of infection, and institute control measures to prevent its spread. The presence of this disease in a community was used to promote sanitation and to organize inoculation clinics. Many contacts were vaccinated and the net result was that 937 people were protected with the necessary three doses of typhoid vaccine.

An investigation of the cases revealed the fact that a large number of them were at widely separated rural homes, sanitary conditions at which were very bad. Usually an open spring and an open toilet were being used.

No typhoid deaths were reported from Henry or Chesterfield Counties. Exclusive of Lee County, there was, in the sanitary officer project counties, a total of 113 cases and 16 deaths for the fiscal year. This gives a typhoid case rate of 0.63 per thousand, and a death rate of 0.08 per thousand inhabitants for the nine counties. This is somewhat below the average for Virginia. The State case rate for the same period is 1 per thousand, and the State death rate is 0.1 per thousand.

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DIPHTHERIA TOXIN ANTITOXIN CLINICS

The sanitary officers assisted in organizing and conducting toxin antitoxin clinics. In Pulaski County, assistance was given the superintendent of schools and the local board of health in advertising and organizing the work with the result that 1,115 children were treated.

In Washington County, clinics were held in Abingdon, Glade Spring, Meadow View, and Damascus. Three hundred and eighty seven children were immunized against diphtheria. Other clinics are to be held later.

In Chesterfield County, the county nurse and sanitary officer cooperated in holding a series of clinics. These were well attended and 2,421 children received the protective treatments against diphtheria. Other clinics were held in Roanoke County with 709 children treated, and in Prince Edward County, where 685 were immunized.

MOTION PICTURE MADE

During the year a motion picture showing each step in the construction of a septic tank from the digging of the hole to the completion of the subsoil drainage system was made. The picture was taken at a rural home in Chesterfield County. The sanitary officer assisted in arranging the many details necessary to complete the project. This reel, with proper titles explaining the picture, is now a part of the motion picture exhibit given by the State board of health throughout the counties of Virginia. It is thought that it will be very helpful in showing the people the proper way to build a septic tank, and in promoting sanitation work.

* * * * * * *

EDUCATION

The gospel of good health and improved sanitation was carried to the doorstep of the homes by nearly 17,000 home visits and personal interviews. These were supplemented by newspaper articles, distribution of State board of health literature, public talks, and moving-picture shows.

INVESTMENT FOR SANITARY IMPROVEMENTS

The following is an estimate of expenditures by individual property owners for sanitary improvements in the 10 county sanitary officers' projects within the fiscal year:

9 L. R. S. privies, at $50 each	$450.00	
110 box and can privies, at $6 each	660.00	
1,315 pit privies, at $20 each	26,300.00	
13 chemical closets, at $10 each	8,420.00	
379 septic tanks, at $100 each	37,900.00	
340 sewer connections, at $90 each	30,600.00	
Total for sanitary toilets		$104,460.00
99 new wells, at $100 each	9,800.00	
80 old wells improved, at $25 each	2,000.00	
80 springs improved, at $20 each	1,600.00	
15 new cisterns, at $100 each	1,500.00	
47 cisterns repaired, at $25 each	1,175.00	
745 water connections, at $50 each	37,250.00	
Total for improved water supplies		53,325.00
50,016 feet ditches cleaned, at 1⅙ cents per foot		653.52
1,422 feet new ditches		400.39
Grand total		158,838.91

COST OF SANITARY OFFICER SERVICE

The budget for each county was $2,500, of which the county appropriated $1,500, the State allotted $700, and the United States Public Health Service $300. The amounts expended by these agencies within the fiscal year are approximately as follows:

State board of health	$10, 015. 95
Counties	14, 025. 25
U. S. Public Health Service [17]	3, 716. 25
	27, 757. 45

* * * * * * *

MORTALITY REDUCTION

A study has been made to determine some of the results which have been accomplished to date in disease reduction under this plan of work in nine of the county projects now in operation. Four of the projects, those in Chesterfield, Greensville, Henry, and Roanoke Counties, have been in operation since this plan of work started. The Lee County project is excluded from the study as it did not begin until January 1, 1927.

The figures in the following tables apply to the calendar year instead of the fiscal year. As the records of the State board of health for deaths for years prior to 1913 are not available, the comparison in the older county projects is for a seven-year period, one year before the work started and one year after.

The representative counties selected for detailed tables are Smyth and Pulaski from the southwestern group and Greensville and Chesterfield from the southeastern group.

The fifth table gives a group summary of the nine counties.

Deaths from reportable diseases in Smyth County, Va., for equal periods before and after sanitary officer work began

Disease	Number of deaths		Reduction	
	1919–1922	1923–1926	Number	Per cent
Typhoid fever	14	9	5	35.7
Diphtheria	23	13	10	43.5
Scarlet fever	2		2	100
Tuberculosis	115	92	23	20
Pellagra	13	6	7	53.8
Measles	2	19	+17	+800
Meningitis	1	1		
Influenza	95	59	36	37.8
Whooping cough	10	18	+8	+80
Diarrhea and dysentery	88	51	37	42
All causes	1,179	1,165	14	1.2

[17] In addition the salary of the director of this work was paid by this agency.

Deaths from reportable diseases in Pulaski County, Va., for equal periods before and after sanitary officer work began

Disease	Number of deaths		Reduction	
	1917–1921	1922–1926	Number	Per cent
Typhoid fever	14	7	7	50
Diphtheria	15	12	3	20
Scarlet fever	1	1		
Tuberculosis	98	82	16	16.3
Infantile paralysis	1	1		
Pellagra	2	4	+2	+100
Malaria	3		3	100
Measles	12	15	+3	+25
Meningitis		1	+1	+100
Influenza	168	59	109	64.8
Whooping cough	19	14	5	26.3
Diarrhea and dysentery	47	29	18	38.3
All causes	1,164	978	186	16

Deaths from reportable diseases in Greensville County, Va., for equal periods before and after sanitary officer work began

Disease	Number of deaths		Reduction	
	1913–1919	1920–1926	Number	Per cent
Typhoid fever	39	14	25	64.1
Diphtheria	6	7	+1	+16.6
Smallpox	2		2	100
Tuberculosis	145	110	35	24.1
Pellagra	9	6	3	33.3
Malaria	76	14	62	81.5
Measles	9	4	5	55.5
Influenza	139	51	88	63.3
Whooping cough	33	13	20	60.6
Diarrhea and dysentery	55	45	10	18.1
All causes	1,389	935	454	32.6

Deaths from reportable diseases in Chesterfield County, Va., for equal periods before and after sanitary officer work began

Disease	Number of deaths		Reduction	
	1913–1919	1920–1926	Number	Per cent
Typhoid fever	32	8	24	75
Diphtheria	18	19	+1	+5.5
Scarlet fever	5	5		
Tuberculosis	267	165	102	38
Pellagra	29	5	24	82.7
Malaria	41	2	39	95.1
Measles	14	9	5	35.7
Meningitis		1	+1	+100.0
Influenza	117	74	43	36.7
Whooping cough	29	15	14	48.2
Diarrhea and dysentery	122	79	43	35.2
All causes	2,112	1,611	501	24

Comparative table of deaths from reportable diseases in nine sanitary officer counties for equal periods before and after sanitary officer work started

Disease	Before health work began	After health work was in operation	Reduction	
			Number	Per cent
Typhoid fever	255	112	143	56
Diphtheria	160	124	36	22.5
Smallpox	3	1	2	66.6
Scarlet fever	19	17	2	10.5
Tuberculosis	1,559	1,460	99	6.3
Infantile paralysis	11	4	7	63.6
Pellagra	95	53	42	44.2
Malaria	122	16	106	86.8
Measles	91	98	+7	+7.6
Meningitis	9	9	----------	----------
Influenza	940	580	360	38.2
Whooping cough	175	150	25	14.2
Diarrhea and dysentery	637	498	139	20.2
All causes	12,604	11,675	929	7.3

It will be noted that the individual county tables show an increase in the number of deaths from certain diseases. All of them, however, show a reduction in typhoid fever, diarrhea and dysentery, tuberculosis, and deaths from all causes. The group summary shows a reduction in deaths from all of the diseases with the exception of measles. The deaths from this disease show an increase of 7.6 per cent. This is one of those diseases which sanitation has little, if anything, to do with. The outstanding results are 56.6 per cent reduction in typhoid fever deaths; 20 per cent reduction in deaths from diarrhea and dysentery; 86.8 per cent reduction in malaria deaths; 6.3 per cent reduction in tuberculosis deaths; and a 7.3 per cent reduction in deaths from all causes.

In order to contrast the percentage of prophylactic measures and sanitary improvements with the percentage of disease reduction, the following statistics are submitted:

There are 35,003 homes in the nine counties. Our records show that 32.8 per cent of the homes have been completely screened and a larger number partially screened. Forty-three and one-tenth per cent are now using water from supplies which have been classed as safe, and 66.6 per cent have been equipped with some form of safe excreta disposal system. Continuous maintenance work has been carried on, and we find that 7,305 sanitary toilets which needed repairs were repaired and restored to a sanitary condition. In other words, 31.2 per cent of the sanitary equipment has been overhauled.

According to the 1920 census, the population of these counties is 178,654. Data collected from the survey cards show that 42.9 per cent of the population have been vaccinated against smallpox; 8.5 per cent against typhoid fever, and 5.1 per cent against diphtheria.

Of the 321 organized dairies located in these counties, 70 per cent have been rated as in good sanitary condition. Fifty-eight and six-tenths per cent of the cows in these herds have been tuberculin tested.

Of the 529 schools located in these counties, 44.4 per cent have a safe water supply; 72.7 per cent have sanitary drinking facilities; and 95.6 per cent are provided with sanitary excreta disposal systems.

Three-County Project in Georgia

The project in the southwestern part of Georgia inaugurated in the fiscal year 1924 and described in the report for that year [18] and

[18] Reprint No. 964, from Public Health Reports of Oct. 17, 1924, p. 22.

discussed in the reports for the fiscal years 1925 [19] and 1926 [20] was continued throughout the fiscal year 1927.

Due to the discontinuance of the financial assistance from the State board of health for the support of the work, this cooperative project as originally organized had to be terminated on June 30, 1927.

In this project one whole-time health officer, a physician with training in health work, served as health officer of each of three adjacent counties. Under his direction there was on duty in each of the three counties an assistant health officer, a layman with practical training in sanitary work, and, in one of the counties, there was on duty also a county health nurse.

The special purpose of this cooperative project was to demonstrate an economical plan of public-health administration adapted to counties with resources too limited for each to support readily a complete, whole-time county health department.

The project appears, from a demonstration standpoint, to have been a marked success. The work was conducted under exceptional difficulties and thereby was given a severe test. The plan carried out in the three-county project in Georgia seems right in general principle and is applicable to numerous groups of counties in the United States.

Special Features

In Bernalillo County, N. Mex., in April, the county health department found, by routine bacteriological examination, evidence of sewage pollution in the water supply of the principal city of the county, Albuquerque. This supply was obtained from a number of wells. Some of the wells were found clean and others contaminated. The contaminated wells were eliminated from the source of supply and chlorination of the water from the other wells was begun at once. No outbreak of typhoid fever or other intestinal disease occurred. This illustrates how vigilant health service may prevent outbreaks of disease. Many serious typhoid fever outbreaks which have occurred in this country would have been prevented if the communities affected had had the sort of preepidemic health service which Albuquerque had in this instance. The field agent-county health officer attributes a 50 per cent reduction in the typhoid rate for 1927 in this county to the energetic campaign of his department for improved sanitation.

In Dona Ana County, N. Mex., in May, a case of typhoid fever was reported from a dwelling which is bisected by the line between New Mexico and Texas. Upon investigation by the Dona Ana County health officer, two cases of typhoid fever were found in this house—one being cared for in a room on the New Mexico side and

[19] Reprint No. 1047, from Public Health Reports of Oct. 23, 1925, pp. 28-29.
[20] Reprint No. 1118, from Public Health Reports of Oct. 22, 1926, pp. 32-33.

the other in a room on the Texas side. The county health officer in his capacity as such had no jurisdiction over the case in the room in the Texas half of the house, but in his dual capacity of health officer of Dona Ana County and field agent of the United States Public Health Service he had precautionary measures carried out in both halves of the house and there has since been no evidence of further interstate spread of infection in this home. In the same month a child residing in the adjacent Texas county, which is without whole-time county health service, returned to school in Dona Ana County while still in the infectious stage of scarlet fever. The case was discovered promptly and the child was sent back home. Contacts in the school were kept under observation, and the two or three cases developing among them were isolated immediately.

In Jefferson County, Kans., measures were carried out promptly to prevent outbreaks of smallpox in two striking instances. In one instance over 200 persons were exposed to a case of smallpox at a Christmas entertainment, and in the other about 100 persons were exposed to three cases at a funeral. In both cases all contacts were vaccinated immediately and none of them developed the disease.

In Washington County, Miss., 49,075 persons were given antityphoid injections. About 40,000 received the injections in the month of May when the county health department with considerable assistance from outside was carrying out an energetic and well-organized program of sanitary measures to prevent disease in the wake of the flood. Practically the whole area of this county was inundated during the Mississippi Valley floods in the spring of 1927.

In Pulaski County, Ark., another flood-stricken county, 10,417 persons were given antityphoid injections, and over 2,000 acres of inundated land were oiled periodically to prevent anopheline mosquito breeding.

In Dubuque County, Iowa, 8,208 complete immunization (toxin-antitoxin) treatments against diphtheria were given within the fiscal year. The health officer reported that, at the end of the year, nine-tenths of the enrolled school children in the county were recorded as having had the diphtheria preventive. In Dubuque County, since the whole-time county health department began operating in 1921, the number of cases of communicable disease reported for the month of June has averaged 27 as against 156 for the month of June, 1920. The economic saving to the community from the reduction in the prevalence of this group of diseases alone appears to have given a large return on the investment for the health service. Notwithstanding this and the many other obvious net advantages of the service, the county government failed to continue its part of the appropriation for the whole-time county-city health work and the cooperative project in Dubuque County terminated on June 30, 1927.

In Mason County, Ky., 92 persons were examined at a tuberculosis clinic conducted August 10–12, 1926, with the active cooperation of the local practicing physicians and of specialists from the State tuberculosis association. Of the persons examined, 26 were found to have active tuberculosis, and only one of these had previous knowledge of his affliction. The local practicing dentists, in cooperation with the county health officer, made dental examinations of all children attending schools in the city of Maysville in this county.

In Weakley County, Tenn., an orthopedic clinic was held in July 1926, for indigent cripples. Through cooperation with the surgeons of a clinic in a nearby city, arrangement was made for hospital treatment and care of each of the 23 cases examined.

In Rhea County, Tenn., where one of the county sanitary officer projects has been in operation since October 1, 1925, remarkable progress has been made in sanitation, and a reduction of 80 per cent in the rate of prevalence of typhoid fever appears to have resulted. In Dayton, the principal incorporated town in this county, an election was held in December, 1926, to float bonds for the extension of the sewerage system throughout the corporate limits, and not a vote was cast against the issue. The week ended March 29, 1927, was health week in Rhea County. The program was sponsored by the business men's club, the county tuberculosis association, the county board of health, the county school board, and the parent-teacher's association. Every local physician cooperated actively, making health examinations, without charge, of all persons applying within the week. Among the many examined were 761 school children, and parents were notified of the 999 physical defects found among these school children.

In Decatur County, Ga., one of the counties in the three-county project, excellent publicity for the health work was obtained in the local press. Among the ingenious devices for effective publicity was a full page advertisement of various local businesses in their relationship to sanitation and health. This was carried in the Bainbridge Post-Searchlight, as shown in the accompanying cut.

In Obion County, Tenn., practically every local physician cooperated actively in a nose and throat clinic for school children. At this clinic, 22 operations for removal of tonsils or adenoids, or both, were performed in one day by local nose and throat surgeons who rendered their services gratuitously.

In Ottawa County, Kans., every physician and every dentist in the county contributed free and helpful service to the county health department in a series of conferences for preschool children. At nine of these conferences, held in different parts of the county the last week of May and the first week of June, 199 children were examined.

68037°—27——4

Proper Food Means Better Health

Our Refrigerator Protects You in This Respect.

"YES WE DELIVER"

Grocery Company

Phones 384--385

We Use Sanitary Paper Cups at Our Fount.

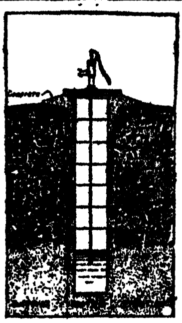
Drug Store

Sanitary Homes Must Have Good Plumbing.

K S

GOT IT

Plumbing, Electrical and all Building Materials.



A Safe Well

This is the type of Well recommended by the State Health department. It will keep your water supply safe Is your water pure? Have your Sanitary Officer examine it for you.

Every Modern Facility for Examining Your Eyes.

Good Eye Sight is One of Your Most Precious Gifts

OPTICAL PARLOR

Good Health Depends on

PLENTY FRESH AIR

Let Us Repair Your Car So You Can Ride.

Garage

Good Food Keeps Your Body Going.

Good Gas Keeps Your Car Going

WE HAVE IT!

Gas Motor Oil

SERVICE STATION

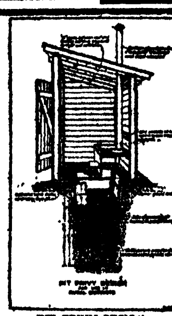
Sanitate and Save Your Life.

Open an Account With Us and Save Your Money.

The Bank & Trust Company

Old Type Privy.

This is the type of Privy that spreads disease. It causes the spread of Typhoid Fever, Flux, Colitis, Summer Complaint Tuberculosis and other diseases. Let's get rid of them in Decatur County.



PIT PRIVY DESIGN.

This is the type of Sanitary Privy every rural home should have in Decatur County. Its cost is small. Less than one case of sickness. Your Sanitary Officer will show you how to build one. Do it now before some member of your family is made sick. If you have no bulletin get one from the Health Department.

"GOOD CLOTHING PREVENTS PNEUMONIA"

We Sell Good Clothing

Healthful Homes are Screened and Well Painted.

We Sell Good Screening and Building Materials.

In Walker County, Ala., 11,141 persons were vaccinated for protection against smallpox within the fiscal year. The records show that since 1913 over 50 per cent of the total population of the county have been vaccinated against smallpox and over 40 per cent against typhoid fever.

Walker County was the first county in Alabama to have a whole-time county health officer. The position was established in the last part of 1913 and has been maintained since then. Walker County was one of the counties of which the Public Health Service made a complete house-to-house sanitary survey in 1915.[21] The cooperative project in this county has furnished a good demonstration of well-rounded, well-coordinated, efficient, and economical county-wide health service. Marked progress has been made in environmental sanitation, in personal hygiene, and in the application of specific measures for the prevention of disease since the whole-time service was established. The results are reflected in the lowered death rate—especially from the diseases, such as typhoid fever, diarrhea and enteritis, diphtheria, scarlet fever, malaria, and tuberculosis, which are the more readily susceptible to control measures. The infant death rate per 1,000 of living births in 1913—the year immediately before the whole-time health service became operative—was 155; in 1926 it was 60. The death rate per 1,000 population for all causes in 1926 was 10.9, as against 17 in 1913. The population of Walker County is now about 60,000. A lowering of the death rate by 6 points, therefore, means 360 less deaths a year. For every death prevented by health work about 10 cases of incapacitating disease are prevented. The average case of such illness prevented would cost in wage loss and in expenses for the care of the sick about $100. Thus the economic saving to the citizens of Walker County from their investment for progressive health work can be estimated at $360,000 a year. The average annual expenditure from all sources for the support of the county health department service in this county for the last five years has been $8,800.41.

General Progress in Rural Health Work

Progress in the development of whole-time rural (county) health service in the United States continued in the fiscal year 1927. According to data [22] collected by the rural sanitation office from the State health departments, the number of counties or equivalent divisions provided with local health service reaching all rural sections thereof, under the direction of whole-time county or district health officers, was 337 at the beginning of the calendar year 1927, as compared with 307, 280, 250, 230, 202, 161, and 109 at the beginning of the

[21] Public Health Bulletin No. 94, pp. 153-168.
[22] Reprint No. 1115 from Public Health Reports of Apr. 29, 1927.

calendar years 1926, 1925, 1924, 1923, 1922, 1921, and 1920, respectively. The gain of 228 within this seven-year period, though much less than it might have been had means been provided for a larger degree of cooperation from the Federal and State official agencies, is significant.

The prospects are good for a better rate of progress in this vitally important field in the next seven years. Our public-health administrators generally now appear convinced that local official health service under the direction of a whole-time local health officer is the most essential element in the development of an adequate system of effective and economical public-health service in the United States, and that most of the work of the Federal and State health agencies should be conducted with and through such local health departments. The principle of cooperative rural health work appears sound in theory and is successful in practice. State health departments in increasing number from year to year are obtaining authorization and appropriations to enable them more nearly to do their due and proportionate part in the development and maintenance of whole-time county health service.

Nothing progresses like progress. The progress made in the construction of good public roads, in the provision of improved public-school facilities, and in other important governmental enterprises in our rural communities generally within the last 25 years furnishes a basis of optimism for an increased rate of development from now on in efficient economical whole-time official county health service in this country.

It appears at this time that of all the fields of activity in which our governmental and other agencies might operate at increased rate for the promotion of the welfare of our people no other offers greater net advantages than does that of rural health service. In view of the results accomplished in the demonstration projects and the needs of the situation, there is reason to expect a more active and constructive interest in the development and maintenance of well-balanced comprehensive whole-time county health service than has been manifested heretofore. With a marked increase in such service, there would no longer be an excuse for the numerous makeshifts or expedients in rural health work programs which, though comparatively expensive and ineffective, are now supported by many of our public-health minded citizens.

During the recent floods in the Mississippi Valley the advantages of previously operating whole-time county health departments were definitely demonstrated. In the flood-stricken counties provided with such departments the whole-time health officers, as a rule, performed with remarkable promptness and efficiency in the organization

of working forces and in the carrying out of measures for both immediate and post-flood sanitary protection of the stricken people. The contrast between this work in the minority of the counties which had whole-time county health departments and in those not so provided stood out sharply. Since the flood several cooperating agencies, including the United States Public Health Service, the International Health Board, and the State health departments directly concerned, have undertaken to develop whole-time county health departments in the (approximately) 90 flood-stricken counties which did not have such organizations at the time of the flood. This undertaking has been attended with a number of practical difficulties, such as obtaining comparatively small appropriations from the hard-pressed county governments for the support of the budgets and securing promptly satisfactory personnel to fill the positions in the county health departments for which financial provision has been made. It is going forward, however, as well as was reasonably to be expected.

Whole-time county health departments as usually organized, in order to be satisfactorily effective in time of disaster, must be in full operation before the disaster. They can not, as a rule, be organized and put on an operating basis of high efficiency within a few days or even a few weeks to meet an unusual critical situation. In view of the preventable-disease disaster with which every populated county in the United States not provided with efficient health service is frequently visited, there appears sufficient reason why there should be an increased rate of development of efficient whole-time county health service in every section of the United States.

Summary

The 86 cooperative projects in the fiscal year ended June 30, 1927, yielded results exceeding in value manyfold the cost of the work. Among the activities and results presented in the tabular statement (pp. 2554 to 2557), to which especial consideration may be given, are the following:

1. Public lectures presenting the principles and details of sanitation to over 378,604 persons.

2. Over 159,740 sanitary inspections of premises, with explanation of findings to occupants or owners of the properties.

3. Physical examination of over 219,600 school children, of whom over 132,000 were found to have incapacitating physical defects, with notification to parents or guardians of defects found.

4. Exclusion from public schools of 11,538 children affected with communicable diseases—such as diphtheria, scarlet fever, measles, whooping cough, scabies, and pediculosis—or presenting evidence of being carriers of the contagions of such diseases. This was brought about through active cooperation of school-teachers with the county

health departments, and it must have been a very considerable factor in preventing widespread infection.

5. Thirty-two thousand three hundred and fifty-four recorded treatments effecting correction of incapacitating physical defects among school children. These were brought about by written notification, to parents or guardians, of defects found, follow-up visits to homes of the children, making available proper clinical facilities, securing active cooperation of the local medical and dental professions, and other activities of the county or district health departments.

6. Bringing about treatments for correction of serious physical defects in 1,437 infants and 2,854 preschool children.

7. Treatments to correct iodine deficiency in 1,361 persons in endemic goiter districts.

8. Sixty-six thousand and ninety-seven visits to homes of cases of communicable disease to advise and show the afflicted households how to prevent spread of the infections.

9. Nine thousand one hundred and seventy-six visits by health nurses or health officers to prenatal cases to advise and assist expectant mothers in carrying out hygienic and physiological measures making for healthy mothers and healthy babies.

10. Instruction of 2,049 midwives in cleanly and careful methods.

11. Twenty-three thousand nine hundred and ninety-five infants and children of preschool age examined and over 39,688 home visits by health nurses or health officers to demonstrate hygienic measures for the promotion of the health and the proteciton of the lives of infants.

12. One hundred and sixty-seven thousand one hundred and sixty-four persons given immunization injections for protection against typhoid fever.

13. Ninety-three thousand eight hundred and thirteen persons vaccinated against smallpox.

14. Fifty-eight thousand nine hundred and ninety-five children treated with toxin-antitoxin mixture for immunization against diphtheria.

15. Sixty-four thousand two hundred and forty-seven cows tuberculin tested, with elimination of reactors from herds, to prevent communication of bovine tuberculosis to persons through the medium of milk.

16. One thousand five hundred and eleven persons treated effectively for relief from hookworm disease and for the prevention of the spread of the infection.

17. Marked reduction in the spread of malaria in hundreds of localities, with an aggregate population of several hundred thousand.

18. Thirty-one thousand six hundred and twenty-six treatments to rid persons of venereal disease infection and prevent the spread of the infection.

19. Special examination of 5,006 persons for tuberculosis, of whom 1,399 were found with an active tubercular process and were advised to place themselves in the care of their private physicians and to carry out hygienic measures. Five hundred and twenty-seven of the positive cases were sent to institutions maintained in whole or in part for the treatment of tuberculosis.

20. Twenty-five thousand three hundred and seventy-eight cases of dangerous communicable diseases quarantined to prevent the spread of infection in the local community, the State, and throughout the country.

21. The installation of 12,034 sanitary privies and 2,308 septic tanks at dwellings where previously there had been either insanitary privies or no toilets of any sort.

22. Nine thousand five hundred and sixty-nine privies repaired so as again to be of sanitary type.

23. Seven thousand three hundred and eighty-six homes connected for the first time with sanitary sewers.

24. Nine thousand four hundred and forty-seven homes provided with safe water supplies in place of contaminated water supplies.

25. Radical improvement of nine hundred and seventy public milk supplies (the milk from which was being distributed to a considerable extent through the channels of interstate commerce) to prevent the spread, through milk and milk products, of such infections as typhoid fever, scarlet fever, diphtheria, tuberculosis, septic sore throat, and infant diarrhea.

26. Eight thousand two hundred and fifty-nine adult persons (most of them over 40 years of age) examined and advised about measures to conserve their health and prolong their lives.

Such activities and results indicate that the plan of the work is both comprehensive and effective. Considered from both a public health and an economic standpoint, the total result of such work stands in importance to our national welfare second to none other obtainable from equivalent investment of public funds.

CURRENT WORLD PREVALENCE OF DISEASE

REVIEW OF THE MONTHLY EPIDEMIOLOGICAL REPORT ISSUED SEPTEMBER 15, 1927, BY THE HEALTH SECTION OF THE LEAGUE OF NATIONS' SECRETARIAT [1]

Cholera.—A serious extension of cholera in Asiatic ports, especially on the Persian Gulf, occurred during July and August, according to the Monthly Epidemiological Report for September. Serious out-

[1] From the Office of Statistical Investigations, U. S. Public Health Service.

breaks of the disease began the latter part of July at Basra, Abadan, and Mohammerah; Bombay City and Madras City were both seriously infected; and early in August the disease was reported in Chinese ports as far north as Shanghai.

TABLE 1.—*Cholera cases reported in the ports reporting to the Singapore bureau from June 12 to August 20, 1927*

Maritime town	Cases or deaths	Week ended—									
		June		July					August		
		18	25	2	9	16	23	30	6	13	20
Basra	Cases	0	0	0	0	0	5	29	48	125	99
Abadan	do						(*)	122	66	27	
Mohammerah	do	0	0	0	0	0	(*)	52	34	16	69
Ahwaz	do								12	8	
Minab	Deaths									23	
Bombay	do	0	0	2	2	2	10	25	14	11	3
Negapatam	do	0	0	2	0	0	0	0	0	1	3
Madras	do	0	3	0	0	0	35	105	92	72	61
Calcutta	do	43	31	21	12	13	11	12	8	13	12
Bassein	do	2	1	2	13	0	1	0	0	0	0
Rangoon	do	0	1	0	1	0	0	1	0	1	0
Bangkok	Cases	3	4	1	1	1	4	0	0	1	1
Saigon and Cholon	do	2	3	2	1	2	1	0	0	0	0
Turane	do	0	2	2	2	1	1	0	6	2	1
Haiphong	do	11	8	0	7	0	9	8	6	1	2
Macao	Deaths	0	0	0	0	0	0	1	0	2	1
Canton	Cases	0	3	0	1	3	0	0	10	7	
Amoy	do	0	0	0	0	0	0	0	0	5	6
Shanghai	Deaths	1	0	0	0	0	0	0	3	2	12

* Suspected cases were reported.

The following information on the outbreaks on the Persian Gulf and the measures taken for their control is given in the Report:

At Abadan, where the majority of the population consists of labor forces controlled by the Anglo-Persian Oil Co., the epidemic appears so far to have been brought under control immediately; the number of cases began to decrease from the second week of the outbreak. Its control is far more difficult at Basra and Mohammerah, neighboring towns on the Shat-el-Arab, a tidal river. A small decrease in the number of cases occurred at Basra, however, during the fifth week of the outbreak. Small towns farther inland where cases occurred are Ahwaz, on the Persian side of the river, and Gurmat Ali and Zubair, stations on the Iraq Railway within 15 miles of Basra. The infection had not penetrated farther inland by the middle of August, but it is obviously very difficult to control the further spread of the disease by vibrio carriers. The reported case mortality rate is very high (81 per cent); there had been 580 deaths among 716 cases reported in this area up to August 20.

An inoculation campaign is being carried out at Basra; no fewer than 115,000 persons had been inoculated by the middle of August, and inoculations were being steadily continued.

Cholera appeared on August 12 at Minab, a Persian town some 50 miles east of Bender Abbas, at the Strait of Ormuz.

The authorities of Iraq have suspended all third-class travel from Basra, and other passengers by air, land, or water must produce a certificate of inoculation. Similar measures were taken by the Syrian authorities against arrivals from Iraq.

In India the incidence of cholera was very high during the spring months. It continued high but without further increase in the total during June and the first half of July. The incidence was highest in the United Provinces and in Bihar and Orissa, and was spreading seriously in the Punjab, especially in Lahore. In Madras Presidency, where the number of cases increased from 1,226 during the week ended June 25 to 2,780 during the week ended July 9, the greatest prevalence was in the districts of Bellary, Kistna, and Guntur, indicating the spread of the disease from Bombay Presidency, where it has been epidemic since early in the spring. In the four weeks ended July 9 the deaths from cholera reported in India totaled 23,860, as compared with 21,394 in the preceding four weeks and with 3,802 in the corresponding four weeks of 1926.

In French Indo-China cholera incidence decreased during July, except in Annam, where 1,201 cases were reported, as against 882 in June. In Tonkin the number of cases dropped from 3,262 in June to 1,092 in July; and in Cochin China there was also a marked decline. The disease has not been prevalent in Laos or Cambodia.

Plague.—The incidence of plague in India, as usual, reached a minimum in July, and only 87 deaths were reported in the first week of July. The plague incidence from July 1, 1926, to June 30, 1927, has been "the most favorable on record since the reintroduction of plague in India 30 years ago." A summation of the weekly reports, which are provisional and for some districts incomplete, gives a total of 45,456 deaths ascribed to plague in the whole of India during the 52 weeks ended July 2, 1927. The previous most favorable "plague year" was 1921–22, when there were 62,220 deaths. The table below shows that the total has been favorable in all the different Provinces.

TABLE 2.—*Deaths from plague in India, 1921–1927*

Province	Number of deaths (the year ending June 30)					
	1922	1923	1924	1925	1926	1927[1]
North-West Frontier	0	937	13,828	1,021	650	232
Punjab	7,876	41,703	246,264	48,902	66,617	7,930
Delhi	0	2,574	2,563	174	219	25
United Provinces	12,039	76,811	54,427	51,255	33,146	9,255
Bihar and Orissa	8,559	29,519	11,478	6,923	5,409	4,393
Central Provinces	7,561	23,603	13,950	6,807	4,837	5,461
Bombay Presidency	4,606	14,821	28,094	6,674	8,436	6,222
Hyderabad State	733	9,792	13,736	12,207	5,167	2,782
Mysore	6,771	5,797	5,091	1,568	3,821	2,487
Madras Presidency	7,179	11,441	7,739	2,960	1,560	1,769
Bengal and Assam	136	80	2	8	2	1
Burma	6,517	8,154	5,566	992	3,994	1,989
Other Indian States	243	3,143	6,239	5,239	13,546	2,910
Total	62,220	227,875	408,977	144,730	147,404	45,456

[1] Total of 52 weeks ending July 2, 1927.

In Ceylon, plague was somewhat more prevalent in the first half of 1927 than in the preceding year, 74 cases having been reported during the first 28 weeks as compared with 12 cases during the corresponding period of 1926.

In Siam, only 22 cases of plague were reported during the first 28 weeks of 1927, as against 90 and 270 cases, respectively, in the corresponding period of 1926 and 1925.

Plague, though never extremely prevalent in French Indo-China, had a lower incidence than usual during the first seven months of 1927, when 52 cases were reported in Cambodia, 12 in Cochin China, and none in the other provinces. At Kwang-Chow-Wan, there were 130 cases reported in the same period.

The National Epidemic Prevention Bureau at Peking reported the sporadic occurrence, during April, of human and rat plague in Kwangtung and Fukien, both coast provinces of Southern China. No plague had been observed elsewhere in the country.

The plague situation in Java during the current year showed some improvement over the preceding three years. There was an increase in the number of cases in June in most of the infected districts, which is unusual, as June is, as a rule, a month of low incidence.

Plague cases continued to occur only sporadically in Egypt, and the total number of cases in 1927 up to August 5 was only 58, fewer than in any year since 1900. The plague situation in Uganda and in Kenya was better than a year ago; 216 cases were reported in June in Uganda and 67 in Kenya, In Madagascar, the plague incidence reached its annual minimum in June and July, but the reported incidence for the first half of 1927 was higher than for the corresponding period of any previous year of record. Plague was unusually prevalent in Nigeria.

The Gold Coast and other colonies on the Guinea coast have been free from plague since April, 1925; Reunion has been free from plague since February, 1927.

The Argentine Republic reported that two centers of pneumonic plague were found in July in the interior Provinces of Cordoba and Entre Rios. There were also isolated cases of bubonic plague in these Provinces as well as in the Territories of Pampa and Formosa. It was stated that the ports remain free from infection.

Yellow fever.—Cases of yellow fever continued to occur sporadically in August on the Gold Coast and in Senegal. There were four cases reported at Dakar between August 4 and 8 and one case at St. Louis on August 21.

Smallpox.—Smallpox has been unusually prevalent in Algeria during most of the current year, and, with 376 cases reported in July, that month recorded the highest number in many years. Of the cases, 295 were in the Department of Oran.

During the first half of 1927 there were 169,135 smallpox cases and 40,650 deaths reported in India, approximately the same number as for the first half of 1926 but higher than the normal incidence. The case fatality, on the average, was 24 per cent, but there were wide differences in the fatality in different parts of the country. In commenting on this fact the Report states:

The case mortality rate on the basis of reported cases and deaths was very high (about 40 per cent) in northern India (Punjab and the United Provinces), somewhat lower in Bengal, Bihar, and Orissa, and Bombay Presidency, but in Madras Presidency and in the Central Provinces only one-third as high as in northern India.

It is true that the records of both cases and deaths in India are mostly incomplete, but it is not probable that the regular increase of the case mortality rate from south to north and from east to west, which is shown in the table below, is due merely to errors of reporting.

TABLE 3.—*Incidence and case fatality of smallpox in India during the first half of 1927*

Province	Population (1921) in thousands	Cases	Deaths	Rate per 100,000 population	Case fatality, per cent
Northwest frontier	2, 251	105	25	1. 1	23. 8
Punjab	20, 685	8, 850	3, 597	17. 4	40. 6
United Provinces	45, 376	3, 959	1, 539	3. 4	38. 9
Bihar and Orissa	34, 002	68, 407	15, 059	44. 3	22. 0
Bengal	46, 696	40, 631	11, 332	24. 3	27. 9
Assam	7, 606	4, 075	1, 220	16. 0	29. 9
Burma	13, 212	3, 566	872	6. 6	24. 5
Hyderabad	12, 472	2, 712	644	5. 2	23. 7
Bombay Presidency	19, 348	13, 164	2, 929	15. 1	22. 3
Central Provinces	13, 913	13, 953	1, 764	12. 7	12. 6
Madras Presidency	42, 319	8, 001	1, 190	2. 8	13. 8
Other Indian States	37, 342	1, 112	479	1. 3	43. 1
Total January-July 1927	295, 222	169, 135	40, 650	13. 8	24. 0
Total January-July 1926		165, 875	40, 696		24. 5
Total January-July 1925		124, 848	29, 557		23. 7

Enteric fever.—The enteric fever situation was, on the whole, favorable in July in most European countries. In England the incidence decreased toward the end of July, while fewer cases than usual were reported in July in Denmark, Norway, Sweden, and Finland. In England and Wales there were 321 cases during the four weeks ended August 20, as compared with 406 cases during the preceding four weeks, although the incidence ordinarily increases markedly at this time of year. In Germany fewer cases were reported in July and early in August than during the corresponding months of any previous year. It is to be noted in this connection that exceptionally cool and wet weather prevailed over the northern part of Europe in June and early in July.

Farther south in Europe the incidence may be characterized as normal, except in Italy, where it was above the normal (2,100 cases during the four weeks ended July 3, as against 1,274 cases during the corresponding period of the previous year). In the Serb-Croat-Slovene Kingdom the incidence was also higher than last year, and there was an outbreak at Belgrade, where 48 cases were reported during the first week of August. It seems to have been promptly controlled, as there were only 10 cases the following week. The crest of the seasonal curve for enteric fever is not reached until September or October, but its low prevalence in summer in many countries is probably of good augury for the autumn.

A comparison of the mortality from enteric fever in different groups of cities is shown in Table 4.

TABLE 4.—*Mortality from typhoid fever in large towns in 1925 and 1926*

Towns	Population in thousands	Number of deaths		Death rate per 100,000 population	
		1925	1926	1925	1926
107 English towns	19,411	183	140	0.9	0.7
16 Scottish towns	2,396	24	23	1.0	1.0
3 Scandinavian towns	1,300	11	11	.8	.8
48 German towns	17,024	336	483	2.0	2.8
47 German towns [1]	16,597	330	223	2.0	1.3
14 Dutch towns	2,411	57	44	2.4	1.8
30 Swiss towns	1,184	16	13	1.4	1.1
2 Belgian towns	1,126	39	22	3.5	2.0
5 French towns	3,932	222	214	5.6	5.4
7 Italian towns	3,447	483	646	14.0	18.7
49 Spanish towns	4,263	890	1,081	20.9	25.4
9 Czechoslovakian towns	1,176	97	84	8.2	7.1
4 Polish towns	1,995	256	308	12.8	15.4
79 Ukrainian towns	3,460	443	528	12.8	15.3
2 towns of the U. S. S. R	3,632	463	409	12.7	11.3
2 Egyptian towns	1,351	445	438	32.9	32.4
21 Japanese towns	8,741	---------	2,325	---------	26.3
4 Indian towns	3,128	909	1,057	29.1	33.8
59 towns of the United States	29,621	993	822	3.4	2.8

[1] Excluding Hanover.

It is seen that in Europe the incidence of the disease in general increases from north to south. In England and in the Scandinavian countries, the mortality was less than 1 per 100,000 population; in German, Dutch, and Swiss towns it was mostly between one and two per 100,000 (the explosive outbreak at Hanover in 1926, when the mortality was 60.9, being excluded). In southern and eastern Europe the death rates from enteric fever are mostly between 10 and 20 per 100,000; and in certain Spanish and Italian towns they exceeded 30.

Dysentery.—Although a seasonal increase in dysentery occurred in July and August in European countries where the disease is endemic, there were, on the whole, fewer cases than in previous years. In Germany, 306 cases were reported during the four weeks ended August 6, as compared with 417 cases during the corresponding period of the preceding year. In Poland, in the same four weeks, there were 502 cases reported, as against 1,062 in the preceding year. Countries farther south showed less improvement, but the incidence was not above normal.

Acute poliomyelitis.—No serious outbreaks of poliomyelitis were reported in Europe during July or the first half of August. The incidence in England and Wales was lower than last year and in Germany it was about the same, but the 1926 prevalence was somewhat above the normal. An outbreak of poliomyelitis began in Rumania in June and up to the end of the month 226 cases had been reported in Bucharest and 50 in the remainder of the country.

Lethargic encephalitis.—"The incidence of lethargic encephalitis is decreasing in most countries," states the Report, "and no important outbreak has occurred in Europe or in America during the last three years. Its seasonal fluctuations are becoming more and more uncertain; there was thus a slight increase in the number of cases in June in several countries of Northern Europe. In England and Wales there were 142 cases during the four weeks ended July 25, as against 121 cases during the preceding four weeks, but the incidence fell again in the following weeks. There was a slight increase of cases from May to July also in Scotland.

"In Sweden, the number of cases increased gradually from 6 in April to 18 in July, but fell again to 3 during the first half of August. In June, 18 cases were reported in Denmark, as against 7 in May; in July there were only 10 cases. There was a slight increase in July also in the Netherlands and in Belgium."

COURT DECISION RELATING TO PUBLIC HEALTH

Exclusive right to collect and dispose of garbage in city passed on.—(Kansas City, Mo., Court of Appeals; Harper et al. *v.* Richardson, 297 S. W. 141; decided June 27, 1927.) By virtue of a special ordinance the plaintiffs contracted with the city of St. Joseph, Mo., for the exclusive right to collect and dispose of all garbage in said city. The ordinance required householders to separate garbage from refuse matter, and also required the payment of fees monthly, in advance, by householders to the garbage contractor. The ordinance also provided that the contractor could not be required to remove garbage where the householder had neglected to comply with the requirement regarding separation of garbage from refuse matter or had failed to pay the stipulated fee, and the plaintiffs refused to remove garbage from certain premises because of failure to separate garbage from refuse and because of nonpayment of fee. The defendant removed garbage from those premises from which the plaintiffs had refused or failed to remove same, and an injunction was sought to restrain the defendant from collecting and disposing of garbage in the city. The judgment of the lower court was for the defendant and this was affirmed by the court of appeals. The following extracts from the latter court's opinion show the various points decided:

* * * That injunction is the proper remedy there is no doubt.

It may also be held as the established law that the city had the power to require that owners of garbage be compelled to separate the garbage from refuse matter and deposit same in cans at stated times and places for removal. * * *

It is also the law, as insisted by plaintiffs, that the owners of premises where garbage is collected should pay for its removal. * * *

It is also insisted that the power to regulate includes the power to make such regulation effective. The provisions of sections 8, 19, 20, and 24 were directed to this end, in that they provided a penalty of arrest and punishment for a violation of their provisions. These provisions are salutary and proper.

It must be remembered that it is the city's right, under the police power granted it by statute, to provide for the public health, and to this end its right to grant an exclusive franchise may not be questioned. The weakness of plaintiffs' position is that they assume a right under their franchise to penalize the property owners for infractions of the provisions of the ordinance providing an orderly and legal method of punishment, by taking into their own hands and executing a method of punishment, by refusing or neglecting to remove the garbage because not separated, and because the nominated fee for such removal was not paid in advance. Such a situation would defeat the very purpose for which the said special ordinance was enacted, to wit, the conservation of public health.

And so we hold that the chancellor was not in error in finding that defendant had the right to remove and dispose of the garbage for all persons from whose premises plaintiffs had refused to remove the same; that the chancellor was not in error in finding that defendant had the right to remove and dispose of garbage for all persons whose garbage plaintiffs had not offered to remove or requested the owners to permit the removal thereof by plaintiffs.

The chancellor's holding that the ordinance in question, in so far as it gave the exclusive right to plaintiffs to remove and dispose of said garbage was valid and binding, in so far as it provided for the safeguarding and protection of the citizens was not error.

Nor was the chancellor in error in finding that part of the ordinance permitting plaintiffs to refuse to remove garbage, and to permit it to remain upon said premises and rot thereon and become dangerous to the health of the citizens, to be void for the reason it is inconsistent [with] and contrary to the purposes which form the bases of its enactment.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Treatment of Chloro-Taste Problems. L. H. Enslow. *Canadian Engineer*, vol. 52, No. 24, June 14, 1927, pp. 585–587. (Abstract by R. E. Thompson.)

Recent advances in the prevention of taste following chlorination of water are reviewed and discussed in some detail. Such tastes are usually caused by the presence of end products of decay of vegetable or animal matter, including essential oils liberated from algae, or industrial wastes containing phenols or cresols, and by the action of free chlorine on pipe coatings. Tastes due to products of decay may usually be destroyed by increased application of chlorine, subsequently aerating the water or storing it for a few hours. Superchlorination of raw water and subsequent chlorination of effluent has been successful in combating taste due to this cause at Dallas, Tex. For prevention of taste due to phenol wastes, superchlorination and dechlorination and ammonia-chlorine treatment have been found effective, the former at Toronto, Ontario, and in laboratory experiments at Bay City, Mich., and the latter at Greenville, Tenn. Where pipe coatings are involved, the only remedy is to prevent the presence of residual chlorine in the water delivered to the distribution system. This may be effected by employing pre-chlorination only; use of ammonia with chlorine; storage of the chlorinated water; or lowering of the pH value, which insures a more rapid dissipation of the chlorine. Chlorine has been successfully used as an algicide at Lufkin, Mexia, and Texarkana, Tex.

Wells as a Source of Water Supply. Marcel Pequegnat. *Canadian Engineer*, vol. 52, No. 8, February 22, 1927, pp. 241–243. (Abstract by R. E. Thompson.)

Data given on the water supply of Kitchener, which is derived from artesian wells. An average daily consumption of almost 2 m. g. is obtained from 20 to 23 wells of depths ranging from 48 feet in gravel to 350 feet in rock strata. A scheme to obtain water from the Grand River, which will be the ultimate source, was deferred indefinitely in 1921 owing to public opinion and the fact that the cost of installation and maintenance of the filter and chlorinating plants necessary for treatment of the river supply would be excessive compared with cost of extending the present system.

As a result of development of the well supply there is a greater proportionate surplus of water than at any time in history of the works. The air lift system of pumping, although less efficient than deep well turbines, has been found most satisfactory, because of less trouble in operation. The method is very simple and flexible and enables the cleaning of the wells readily. In many cases the Kitchener water, objectionable on account of sulphurous odors, has been improved and rendered entirely usable by the aeration affected by the air lift system. Storage for 1,000,000 gallons has been provided at each of the well developments, sufficient for a normal day's consumption.

Protection of Provincial Water Supplies. Anon. *Canadian Engineer*, vol. 52, No. 17, April 26, 1927, pp. 461–463. (Abstract by R. E. Thompson.)

Details are given regarding the supervision of water supplies in each of the Provinces of the Dominion of Canada, including brief data regarding the supervisory body, its activities, authority, and officials. Each Province has a department of health, with the exception of Prince Edward Island, where conditions are such that there is no urgent need for an organization of this kind, the department of works having supervision over all matters pertaining to the public health. Water supply conditions in general in the Provinces are outlined.

A Long Struggle for Fresh Water. R. E. McDonnell and J. O. Herpin. *Water Works Engineering*, vol. 80, No. 12, June 8, 1927, pp. 783–784 and 881. (Abstract by Frank Raab.)

Port Arthur, Tex., with a population of 45,000, is located on Lake Sabine, about 15 miles from the Gulf of Mexico. This city struggled for 25 years to provide itself with a good fresh-water supply. At different times numerous deep wells were drilled which yielded a satisfactory water for a few years, but invariably the water became too salty for drinking and the wells had to be abandoned. At one time 30 wells, varying in depth from 200 to 2,000 feet, were sunk at a cost of $50,000; but not any of these wells promised a satisfactory and abundant water supply.

Finally, a private concern undertook to bring water from the Neches River, which had a daily flow of 300,000,000 gallons. The water was brought in a canal 50 feet wide and 26 miles long. As soon as the water was available at the city limits, the city built a filter plant to purify and distribute the water. The plant has five 1,000,000-gallon filters, which number can be increased to ten. The water is aerated by spraying to remove gases and vegetable odors. Six electrically driven centrifugal pumps deliver the water. Much attention was paid to the beauty of the interior as well as the exterior of the filter plant, and the grounds were planted with trees, hedges, and shrubbery to give them an attractive appearance. The hearty cooperation of two large refineries which use a great deal of water made this project possible.

Great Advances in Water Softening. Charles P. Hoover. *Water Works Engineering*, vol. 80, No. 14, July 6, 1927, pp. 991–992 and 1019–1020. (Abstract by W. L. Havens.)

This article contains an excellent summary of modern ideas and present methods of water softening. It emphasizes the advantages and disadvantages and describes such equipment as pneumatic conveyors for the handling of chemicals, continuous lime slaking machines, mechanical agitators for chemical mixing, sludge-removal equipment, and recarbonization plants. Tentative estimates are also given to compare the cost of zeolite and soda-ash treatment as applied to the Columbus filtration plant. Natural gas and kerosene oil are recommended as the most suitable fuels to be used for the generation of carbon-dioxide gas. For large installations, producer gas made from coke and then burned to complete combustion, is the most economical method. The paper contains the description of such a plant now under construction at Columbus. The effects of recarbonization and of the addition of sodium aluminate upon the corrosive properties of a water are also discussed.

Progress in the Purification of Water Supplies. Norman J. Howard. *Contract Record*, vol. 40, No. 52, December 29, 1926, pp. 151–155 and 143–144. (Abstract by R. E. Thompson.)

A review of progress in the treatment and purification of water, including filtration, coagulation, softening, correction of corrosiveness, codization, and chlorination. Recent improvements have included methods for reducing the ever increasing bacterial loading of filters, improved underdrain systems and mechanical filters, aeration and chemical treatment for soft corrosive waters, and improved chemicals for coagulation. The employment of mechanical clarifiers is extending. The disposal of industrial wastes which affect water supplies, and the treatment of water for the prevention of taste, has received a great deal of attention during the past year.

Water Supply and Drainage Problems in Scotland. Anon. *Surveyor*, vol. 72 No. 1849, July 1, 1927, pp. 3–4. (Abstract by R. E. Thompson.)

General discussion of water supply and drainage conditions in Scotland as described in the 8th Annual Report of the Scottish Board of Health. In cities and burghs, and in the larger special districts, the local authorities are unusually alive to these problems and deal with them adequately and efficiently, but in some of the smaller burghs and villages conditions are far from ideal, financial difficulties being the chief obstacle to progress. Specific cases are outlined. Drainage does not, as a rule, present such great difficulties as the provision of a water supply, the lack of the latter being usually the main difficulty in securing an efficient water-borne drainage system. The fact that many local authorities discharge untreated sewage into streams is commented upon. Here, again, financial difficulties are the chief obstacle. River surveys, which were inaugurated several years ago, are being continued. The board are not authorized by the river pollution prevention acts to bring compulsory measures to bear upon local authorities. Such improvements as have been effected as a result of correspondence have been of a minor character.

Superchlorination of Chlorophenol Tastes. Louis B. Harrison. *Journal American Water Works Association*, vol. 17, No. 3, March, 1927, pp. 336–340. (Abstract by M. S. Foreman.)

Many cities throughout the United States have been bothered with chlorophenol tastes in water supplies. The writer pointed out that the best method for eliminating these tastes is to keep phenol out of water supplies. In spite of the many precautions taken by industries to control phenol wastes, some invariably finds its way into water supplies.

The author studied the effect of adding various quantities of chlorine to three different kinds of phenolic wastes, namely, dilute phenol solution, gas-works wastes, and wood-distillation wastes. It was found that an excess of chlorine, 1.2 to 2.0 p. p. m. at 38° F., would entirely eliminate chlorophenol tastes after

24 hours in the samples used. Tables given show that each waste requires a different intensity of chlorine to eliminate the phenol taste. Since a considerable quantity of residual chlorine is left, sodium sulphite was added to eliminate this excess. A table shows the minimum time required for the reaction of chlorine and phenolic wastes before the Na_2SO_3 could be added. Two factors which may alter the chlorophenol reaction are pH and temperature. With such a wide variation of temperature in nature it is questionable whether superchlorination is practicable on a large scale.

The Calcutta New Water Works. Anon. *All-India Local and Municipal Self-Govt. Gazette,* vol. 14, No. 2, February 14, 1927, pp. 31–32. (Abstract by R. E. Tarbett.)

Construction now under way for an increased water supply for Calcutta calls for additional river intakes, low-lift pumps, a 200,000,000 gallon settling reservoir, 17 additional filters, presumably slow sand, with a capacity of 50,000,000 gallons per day, additional high-duty pumping equipment, a new holding reservoir of 12,000,000 gallons capacity, new force mains, and a considerable increase in the distribution system. When completed, the capacity of the filtered water system will be 85,000,000 gallons per day.

The pumping equipment for the unfiltered water supply has been replaced with new equipment so as to furnish 65,000,000 gallons per day.

With the completion of the work a continuous supply will be available, whereas at present the supply is available only between the hours of 6 a. m. to 10 a. m. and 3 p. m. to 6 p. m.

DEATHS DURING WEEK ENDED OCTOBER 8, 1927

Summary of information received by telegraph from industrial insurance companies for the week ended October 8, 1927, and corresponding week of 1926. (From the Weekly Health Index, October 12, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Oct 8, 1927	Corresponding week 1926
Policies in force	68, 600, 130	65, 494, 760
Number of death claims	11, 235	10, 866
Death claims per 1,000 policies in force, annual rate	8. 5	8. 7

Deaths from all causes in certain large cities of the United States during the week ended October 8, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, October 12, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Oct. 8, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Oct. 8 1927 [2]
	Total deaths	Death rate [1]		Week ended Oct. 8, 1927	Corresponding week 1926	
Total (66 cities)	6, 150	11. 1	[3] 11. 4	710	[3] 803	[4] 59
Albany [5]	23	10. 0	14. 5	4	5	83
Atlanta	64			7	11	
White	31			2	7	
Colored	33	(6)		5	4	
Baltimore [5]	209	13. 3	11. 9	30	24	93
White	154		10. 2	24	17	93
Colored	55	(6)	21. 9	6	7	93
Birmingham	54	13. 1	11. 9	5	10	
White	24		10. 2	3	5	
Colored	30	(6)	14. 5	2	5	

Footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended October 8, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, October 12, 1927, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended Oct. 8, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Oct. 8 1927
	Total deaths	Death rate		Week ended Oct. 8, 1927	Corresponding week 1926	
Boston	214	14.1	14.0	28	43	78
Bridgeport	22	----------	----------	1	8	19
Buffalo	117	11.1	12.6	15	18	63
Cambridge	26	10.9	16.7	3	4	53
Camden	22	8.6	13.9	3	6	52
Canton	20	9.2	6.2	3	4	71
Chicago [5]	638	10.7	10.4	72	59	62
Cincinnati	107	13.5	17.9	16	19	100
Cleveland	171	9.1	9.6	23	25	61
Columbus	36	6.5	13.2	6	17	56
Dallas	35	8.7	12.8	3	10	----------
White	30	----------	10.4	3	9	----------
Colored	5	(6)	29.0	0	1	----------
Dayton	36	10.4	11.5	4	6	66
Denver	78	14.0	13.0	9	10	----------
Des Moines	26	9.1	10.4	2	1	33
Detroit	232	9.1	10.3	46	37	73
Duluth	16	7.3	11.1	1	5	22
El Paso	21	9.6	12.9	6	3	----------
Erie	34	----------	----------	2	3	39
Fall River [5]	32	12.5	10.0	5	8	88
Flint	26	9.5	11.5	13	10	212
Fort Worth	41	13.0	8.2	2	4	----------
White	31	----------	7.8	1	3	----------
Colored	10	(6)	11.0	1	1	----------
Grand Rapids	24	7.9	12.0	2	6	29
Houston	58	----------	----------	7	3	----------
White	36	----------	----------	4	2	----------
Colored	22	(6)	----------	3	1	----------
Indianapolis	80	11.2	13.1	5	14	39
White	66	----------	12.8	5	11	45
Colored	14	(6)	15.4	0	3	0
Jersey City	69	11.2	10.3	10	4	75
Kansas City, Kans	39	17.4	12.0	3	7	58
White	28	----------	10.8	3	4	67
Colored	11	(6)	17.8	0	3	0
Kansas City, Mo	75	10.2	15.0	8	18	----------
Knoxville	24	12.3	----------	4	----------	----------
White	18	----------	----------	4	----------	----------
Colored	6	(6)	----------	0	----------	----------
Los Angeles	276	----------	----------	15	22	43
Louisville	66	10.6	12.7	2	13	17
White	46	----------	10.3	2	10	19
Colored	20	(6)	26.4	0	3	0
Lowell	22	10.4	13.7	6	4	116
Lynn	25	12.4	11.0	6	3	150
Memphis	74	21.6	22.7	12	8	----------
White	42	----------	16.5	8	6	----------
Colored	32	(6)	33.9	4	2	----------
Milwaukee	120	11.8	9.9	18	6	84
Minneapolis	90	10.6	12.6	4	11	23
Nashville [5]	33	12.5	14.5	4	3	----------
White	23	----------	15.4	4	3	----------
Colored	10	(6)	12.0	0	0	----------
New Bedford	16	7.0	14.0	1	7	17
New Haven	38	10.7	11.2	3	4	42
New Orleans	158	19.4	15.9	18	14	----------
White	94	----------	10.6	11	6	----------
Colored	64	(6)	31.1	7	8	----------
New York	1,158	10.1	10.2	125	123	52
Bronx Borough	178	10.0	7.0	14	12	45
Brooklyn Borough	362	8.3	9.3	43	39	44
Manhattan Borough	490	14.1	13.7	52	55	61
Queens Borough	97	6.3	7.6	15	12	64
Richmond Borough	31	11.0	11.7	1	5	19
Newark, N. J	104	11.6	11.7	14	20	69
Oakland	46	9.0	11.4	3	6	35
Oklahoma City	24	----------	----------	1	5	----------
Omaha	34	8.1	10.4	1	5	11
Paterson	43	15.6	9.1	4	1	71

Footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended October 8, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, October 12, 1927, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended Oct. 8, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Oct. 8 1927
	Total deaths	Death rate		Week ended Oct. 8, 1927	Corresponding week 1926	
Philadelphia	400	10.2	11.4	39	55	52
Pittsburgh	150	12.2	11.1	17	25	59
Portland, Oreg.	45			4	6	42
Providence	64	11.9	8.5	6	4	51
Richmond	61	16.6	12.4	5	5	66
White	36		9.3	3	2	64
Colored	25	[6]	19.9	2	3	76
Rochester	63	10.1	11.5	4	10	34
St. Louis	220	13.7	10.9	14	23	
St. Paul	43	9.0	11.1	2	2	18
Salt Lake City [5]	20	7.7	10.6	4	2	61
San Antonio	58	14.3	10.2	9	12	
San Diego	34	15.4	15.2	6	3	128
San Francisco	159	14.4	14.3	10	4	62
Schenectady	11	6.2	14.0	3	3	90
Seattle	73			2	4	21
Somerville	19	9.7	8.3	3	2	108
Spokane	21	10.0	15.3	2	3	50
Springfield, Mass	31	11.0	10.1	0	3	0
Syracuse	44	11.6	12.4	1	4	13
Tacoma	16	7.8	7.4	1	1	24
Toledo	55	9.4	10.6	5	13	48
Trenton	57	21.7	14.0	8	5	139
Waterbury	11			0	1	0
Wilmington, Del.	22	9.1	11.8	6	4	140
Worcester	47	12.6	16.2	9	5	108
Yonkers	15	6.6	9.9	1	5	23
Youngstown	22	6.8	9.8	3	5	42

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 65 cities.
[4] Data for 60 cities.
[5] Deaths for week ended Friday Oct. 7, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population Atlanta, 31; Baltimore, 15, Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11, Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26, and Richmond, 32.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended October 15, 1927

DIPHTHERIA

	Cases
Alabama	79
Arizona	14
Arkansas	22
California	112
Colorado	16
Connecticut	38
Florida	23
Georgia	39
Idaho	5
Illinois	115
Indiana	39
Iowa [1]	23
Kansas	63
Louisiana	33
Maine	1
Maryland [1]	42
Massachusetts	89
Michigan	90
Minnesota	57
Mississippi	45
Missouri	57
Nebraska	13
New Jersey	116
New Mexico	6
New York	213
North Carolina	149
Oklahoma [2]	125
Oregon	14
Pennsylvania	172
Rhode Island	12
South Carolina	68
South Dakota	2
Tennessee	46
Texas	63
Utah [1]	13
Washington	27
West Virginia	31
Wisconsin	41
Wyoming	1

INFLUENZA

	Cases
Alabama	16
Arizona	1
Arkansas	29
California	19
Connecticut	5
Georgia	19
Illinois	17
Indiana	10
Louisiana	5
Maryland [1]	2
Massachusetts	9
Michigan	1
Missouri	5
Nebraska	3
New Jersey	3
New York	2
Oklahoma [2]	43
Oregon	11
South Carolina	285
Tennessee	18
Texas	55
West Virginia	10
Wisconsin	69

MEASLES

	Cases
Alabama	10
Arkansas	12
California	55
Colorado	8
Connecticut	19
Delaware	10
Georgia	3
Idaho	2
Illinois	12
Indiana	16
Iowa [1]	1
Kansas	23
Louisiana	6
Maine	31

[1] Week ended Friday.

[2] Exclusive of Oklahoma City and Tulsa.

MEASLES—continued

	Cases
Maryland [1]	19
Massachusetts	108
Michigan	30
Minnesota	2
Missouri	5
Montana	3
Nebraska	2
New Jersey	13
New Mexico	11
New York	99
North Carolina	113
Oklahoma [2]	36
Oregon	13
Pennsylvania	226
Rhode Island	7
South Carolina	177
South Dakota	1
Tennessee	19
Texas	3
Vermont	1
Washington	30
West Virginia	6
Wisconsin	57

MENINGOCOCCUS MENINGITIS

Arkansas	2
California	4
Colorado	2
Illinois	6
Iowa [1]	2
Kansas	1
Louisiana	2
Maryland [1]	1
Michigan	1
Minnesota	1
Missouri	1
Montana	2
Nebraska	1
New Jersey	3
New York	2
Oklahoma [2]	1
Pennsylvania	2
Texas	1
Washington	1
West Virginia	1
Wisconsin	8

POLIOMYELITIS

Arizona	6
Arkansas	13
California	26
Colorado	11
Connecticut	8
Illinois	26
Indiana	13
Iowa [1]	5
Kansas	26
Louisiana	1
Maine	12
Maryland [1]	2
Massachusetts	78
Michigan	21
Minnesota	5
Missouri	20
Montana	2

POLIOMYELITIS—continued

	Cases
Nebraska	13
New Jersey	9
New Mexico	15
New York	38
Ohio	77
Oklahoma [2]	13
Oregon	19
Pennsylvania	33
Rhode Island	2
South Carolina	3
South Dakota	2
Tennessee	3
Texas	10
Utah [1]	2
Vermont	1
Virginia	2
Washington	38
West Virginia	14
Wisconsin	12
Wyoming	3

SCARLET FEVER

Alabama	25
Arizona	4
Arkansas	6
California	90
Colorado	38
Connecticut	15
Delaware	2
Florida	6
Georgia	24
Idaho	9
Illinois	134
Indiana	67
Iowa [1]	11
Kansas	77
Louisiana	7
Maine	9
Maryland [1]	24
Massachusetts	157
Michigan	95
Minnesota	78
Mississippi	13
Missouri	77
Montana	12
Nebraska	47
New Jersey	53
New Mexico	11
New York	146
North Carolina	116
Oklahoma [2]	37
Oregon	21
Pennsylvania	210
Rhode Island	13
South Carolina	18
South Dakota	31
Tennessee	29
Texas	25
Utah [1]	8
Vermont	2
Washington	30
West Virginia	67
Wisconsin	72
Wyoming	9

[1] Week ended Fiday.

[2] Exclusive of Oklahoma City and Tulsa.

SMALLPOX

	Cases
Alabama	1
Arkansas	2
California	3
Idaho	1
Illinois	18
Indiana	6
Iowa [1]	4
Kansas	15
Louisiana	10
Michigan	9
Minnesota	1
Missisipi	1
Missouri	13
Montana	4
Nebraska	3
North Carolina	5
Oklahoma [2]	6
Oregon	24
South Carolina	2
South Dakota	4
Tennessee	25
Texas	4
Utah [1]	10
Washington	11
Wisconsin	7

TYPHOID FEVER

	Cases
Alabama	32
Arizona	7
Arkansas	25
California	8
Colorado	13
Connecticut	5
Delaware	2

TYPHOID FEVER—continued

	Cases
Florida	3
Georgia	26
Illinois	28
Indiana	36
Iowa [1]	3
Kansas	48
Louisiana	5
Maine	6
Maryland [1]	24
Massachusetts	8
Michigan	27
Minnesota	10
Mississippi	10
Missouri	30
Montana	4
Nebraska	2
New Jersey	9
New Mexico	49
New York	46
North Carolina	22
Oklahoma [2]	85
Oregon	15
Pennsylvania	37
South Carolina	36
South Dakota	5
Tennessee	54
Texas	25
Utah [1]	6
Vermont	1
Washington	4
West Virginia	41
Wisconsin	9
Wyoming	1

[1] Week ended Friday.

[2] Exclusive of Oklahoma City and Tulsa.

Reports for Week Ended October 8, 1927

DIPHTHERIA

	Cases
District of Columbia	22
Georgia	45

INFLUENZA

	Cases
District of Columbia	1
Georgia	19

MEASLES

	Cases
District of Columbia	3
Georgia	17

MENINGOCOCCUS MENINGITIS

	Cases
Georgia	1

POLIOMYELITIS

	Cases
District of Columbia	1
Georgia	10

SCARLET FEVER

	Cases
District of Columbia	11
Georgia	34

TYPHOID FEVER

	Cases
District of Columbia	4
Georgia	34

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
August, 1927										
Colorado	3	67			23		5	67	2	38
New Hampshire	0	3	28				2	15	0	1
September, 1927										
Connecticut	3	78	5	2	27		62	64	0	23
Georgia	0	181	72	404	57	27	4	72	10	220
Indiana	2	60	54		26		32	161	69	116
Massachusetts	4	292	20	2	151	1	376	432	0	84
Michigan	0	229	3	18	55		87	345	53	68

August, 1927

	Cases
Colorado.	
Chicken pox	16
Mumps	13
Ophthalmia neonatorum	1
Paratyphoid fever	8
Tularaemia	1
Whooping cough	87

September, 1927

	Cases
Chicken pox:	
Connecticut	33
Georgia	11
Indiana	25
Massachusetts	78
Michigan	95
Conjunctivitis:	
Georgia	7
Dengue:	
Georgia	4
Dysentery:	
Connecticut (bacillary)	2
Georgia	29
Massachusetts	7
German measles:	
Connecticut	4
Massachusetts	24
Hookworm disease.	
Georgia	25
Lead poisoning:	
Massachusetts	1
Lethargic encephalitis:	
Connecticut	3
Massachusetts	8
Michigan	1

September, 1927—Continued

	Cases
Mumps:	
Connecticut	38
Georgia	15
Indiana	8
Massachusetts	116
Michigan	98
Ophthalmia neonatorum:	
Massachusetts	150
Paratyphoid fever:	
Connecticut	2
Georgia	5
Rabies in animals:	
Connecticut	2
Septic sore throat:	
Connecticut	6
Georgia	27
Massachusetts	9
Michigan	4
Tetanus	
Connecticut	1
Georgia	7
Massachusetts	5
Trachoma.	
Massachusetts	1
Trichinosis.	
Connecticut	2
Typhus fever.	
Georgia	7
Whooping cough:	
Connecticut	180
Georgia	46
Indiana	86
Massachusetts	397
Michigan	563

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 96 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,380,000. The estimated population of the 91 cities reporting deaths is more than 29,750,000. The esti-

mated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended October 1, 1927, and October 2, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
43 States	1,733	1,650	
96 cities	753	716	816
Measles:			
42 States	750	1,061	
96 cities	149	209	
Poliomyelitis:			
43 States	595	88	
Scarlet fever:			
43 States	1,656	1,741	
96 cities	492	559	492
Smallpox:			
43 States	147	79	
96 cities	26	6	11
Typhoid fever:			
43 States	844	1,417	
96 cities	109	245	204
Deaths reported			
Influenza and pneumonia:			
91 cities	353	417	
Smallpox:			
91 cities	0	0	

City reports for week ended October 1, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	1	1	0	0	0	0	0	2
New Hampshire:									
Concord	22,546	0	1	0	0	0	0	0	0
Vermont:									
Barre	10,008	0	0	0	0	0	0	4	0
Massachusetts:									
Boston	779,620	14	33	15	2	0	16	3	11
Fall River	128,993	0	3	6	0	0	1	0	0
Springfield	142,065	0	2	8	0	0	1	0	1
Worcester	190,757	10	5	5	0	0	0	4	3
Rhode Island:									
Pawtucket	69,760	0	1	1	0	0	0	0	2
Providence	267,918	0	4	4	0	0	0	0	2

City reports for week ended October 1, 1927—Continued

Division, State, and city	Population, July 1, 1925 estimated	Chicken pox, cases reported	Diphtheria: Cases, estimated expectancy	Diphtheria: Cases reported	Influenza: Cases reported	Influenza: Deaths reported	Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
NEW ENGLAND—con.									
Connecticut:									
Bridgeport	(1)	0	7	5	0	0	0	0	1
Hartford	160,197		5						
New Haven	178,927	0	3	2	0	0	5	3	2
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	7	15	16		0	6	3	7
New York	5,873,356	16	98	121	3	7	9	7	61
Rochester	316,786	0	7	1		0	2	3	5
Syracuse	182,003	0	6	2		0	12	0	5
New Jersey:									
Camden	128,642	1	4	4	0	0	0	0	1
Newark	452,513	5	8	10	2	0	3	7	0
Trenton	132,020	0	4	6	0	0	0	0	2
Pennsylvania:									
Philadelphia	1,979,364	13	47	66		2	0	11	31
Pittsburgh	631,563	7	20	24		0	81	7	13
Reading	112,707	1	2	0		0	4	0	1
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	0	11	13	0	1	0	0	3
Cleveland	936,485	15	34	67	1	0	4	16	7
Columbus	279,836	0	6	6	0	0	1	0	0
Toledo	287,380	0	13	2	0	0	3	1	2
Indiana:									
Fort Wayne	97,846	0	3	4	0	1	0	0	0
Indianapolis	358,819	2	12	6	0	0	2	10	8
South Bend	80,091	0	1	0	0	0	0	0	0
Terre Haute	71,071	0	1	0	0	0	0	0	1
Illinois:									
Chicago	2,995,239	8	71	53	2	2	5	5	26
Springfield	63,923	0	2	0	1	1	1	1	0
Michigan:									
Detroit	1,245,824	4	55	34	0	1	2	13	10
Flint	130,316	0	10	5	0	0	0	2	1
Grand Rapids	153,698	0	4	1	0	1	2	0	0
Wisconsin:									
Kenosha	50,891		1						
Milwaukee	509,192	12	14	5	0	0	1	6	4
Racine	67,707	0	2	0	0	0	1	0	0
Superior	39,671	0	1	0	0	0	0	0	1
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	0	2	0	0	0	1	0	0
Minneapolis	425,435	4	25	21	0	0	0	0	3
St. Paul	246,001	3	18	3	0	2	0	0	1
Iowa:									
Davenport	52,469	0	1	0	0		1	0	
Des Moines	141,441	1	7	0	0		1	0	3
Sioux City	76,411	0	2	0	0		0	0	
Waterloo	36,771	0	0	1	0		0	1	
Missouri:									
Kansas City	367,481	2	7	1	0	2	0	0	4
St. Joseph	78,342	0	2	0	0	0	0	0	4
St. Louis	821,543	0	35	25	0	0	1	2	
North Dakota:									
Fargo	26,403	0	1	0	0	0	0	1	0
Grand Forks	14,811	0	1	0	0		0	0	
South Dakota:									
Aberdeen	15,036	0	0	0	0		0	1	
Sioux Falls	30,127	0	1	0	0		0	0	
Nebraska:									
Lincoln	60,941	2	0	1	0	0	0	0	0
Omaha	211,768	0	14	2	0	0	1	0	3
Kansas:									
Topeka	55,411	2	1	0	0	0	0	1	0
Wichita	88,367	1	2	1	0	0	0	5	1

[1] No estimate made.

City reports for week ended October 1, 1927—Continued

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	1	2	0	0	0	0	0	2
Maryland:									
Baltimore	796,296	9	18	24	2	0	1	3	10
Cumberland	33,741	0	1	0	1	0	0	0	0
Frederick	12,035	1	1	1	0	0	0	0	0
District of Columbia:									
Washington	497,906	1	10	16	0	0	2	0	9
Virginia:									
Lynchburg	30,395	4	1	4	0	0	0	0	1
Norfolk	(1)	0	3	1	0	0	2	0	0
Richmond	186,403	0	18	12	0	0	2	0	3
Roanoke	58,208	0	5	4	0	0	2	0	0
West Virginia:									
Charleston	49,019	0	2	3	2	2	0	0	0
Wheeling	56,208	1	1	1	0	0	0	0	1
North Carolina:									
Raleigh	30,371	1	4	5	0	0	0	0	0
Wilmington	37,061	1	1	3	0	0	0	0	1
Winston-Salem	69,031	0	4	0	0	0	3	4	2
South Carolina.									
Charleston	73,125	0	1	1	6	0	0	0	0
Columbia	41,225		1						
Greenville	27,311	0	2	1	0	0	0	0	0
Georgia									
Atlanta	(1)	0	8	10	8	0	1	0	6
Brunswick	16,809	0	0	0	0	0	0	0	0
Savannah	93,134	0	2	1	0	0	1	0	0
Florida:									
Miami	69,754	0		0	2	0	2	0	0
St. Petersburg	26,847		0			0			1
Tampa	94,743	0	1	1	0	0	0	0	1
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	2	0	0	0	0	0	2
Lexington	46,895	0		0	0	0	0	0	0
Louisville	305,935	0	8	1	0	0	0	0	4
Tennessee									
Memphis	174,533	1	5	4	0	0	3	3	2
Nashville	136,220	0	4	2	0	2	1	1	3
Alabama.									
Birmingham	205,670	0	7	2	2	2	0	0	5
Mobile	65,955	0	2	1	0	1	0	0	1
Montgomery	46,481	0	2	3	1	0	0	3	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	0	1	0	0		0	0	
Little Rock	74,216	0	1	1	0	0	0	1	3
Louisiana:									
New Orleans	414,493	0	8	8	7	5	0	0	8
Shreveport	57,857	3	1	1	0	0	0	1	2
Oklahoma:									
Oklahoma City	(1)	0	2	5	0	0	0	0	2
Tulsa	124,478	1		4	0		0	1	
Texas.									
Dallas	194,450	0	7	23	0	0	1	0	3
Galveston	48,375	0	0	0	0	0	0	0	0
Houston	164,954	0	3	6	0	0	0	0	5
San Antonio	198,069	0	1	8	0	0	0	0	1
MOUNTAIN									
Montana:									
Billings	17,971	0	0	0	0	0	0	0	0
Great Falls	29,883	3	1	0	0	0	0	0	1
Helena	12,037	1	1	0	0	0	0	0	0
Missoula	12,668	1	0	0	0	0	0	0	0

[1] No estimate made.

City reports for week ended October 1, 1927—Continued

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
MOUNTAIN—contd.									
Idaho:									
Boise	23,042	0	0	1	0	0	0	2	0
Colorado:									
Denver	280,911		15						
Pueblo	43,787	0	4	0	0	0	0	0	0
New Mexico:									
Albuquerque	21,000	0	0	0	0	0	0	1	1
Utah:									
Salt Lake City	130,948	7	4	7	0	0	0	0	3
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	(1)	7	6	10	0		4	2	
Spokane	108,897	3	3	2	0		0	0	
Tacoma	104,455	1	4	4	0	0	0	0	3
Oregon:									
Portland	282,383	6	6	4	0	0	1	1	2
California:									
Los Angeles	(1)	6	32	18	6	1	4	7	7
Sacramento	72,260	1	2	1	0	0	1	1	1
San Francisco	557,530	17	17	11	1	1	9	7	3

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	1	0	0	0	0	1	2	0	0	8	20
New Hampshire:											
Concord	0	0	0	0	0	1	0	0	0	0	11
Vermont:											
Barre	0	0	0	0	0	0	0	0	0	0	1
Burlington	0		0				0				
Massachusetts:											
Boston	21	21	0	0	0	14	4	2	0	17	182
Fall River	1	3	0	0	0	2	2	0	0	0	23
Springfield	3	1	0	0	0	0	0	0	0	0	28
Worcester	4	5	0	0	0	5	0	0	0	2	49
Rhode Island:											
Pawtucket	1	2	0	0	0	2	1	0	0	0	17
Providence	2	7	0	0	0	4	2	2	0	2	58
Connecticut:											
Bridgeport	3	1	0	0	0	0	1	0	0	1	26
Hartford	2		0				0				
New Haven	3	2	0	0	0	0	2	0	0	4	32
MIDDLE ATLANTIC											
New York:											
Buffalo	9	12	0	0	0	11	2	0	0	23	132
New York	45	49	1	0	0	(2) 77	40	25	0	114	1,147
Rochester	3	2	0	0	0	3	1	3	0	2	59
Syracuse	5	4	0	0	0	7	2	1	0	2	42
New Jersey:											
Camden	3	0	0	0	0	1	2	0	0	0	33
Newark	6	5	0	0	0	8	2	2	0	37	92
Trenton	1	1	0	0	0	3	0	0	0	1	34
Pennsylvania:											
Philadelphia	31	31	0	0	0	30	14	3	0	29	405
Pittsburgh	20	15	0	0	0	7	4	2	1	7	145
Reading	0	1	0	0	0	0	0	1	0	0	24

1 No estimate made.

2 Pulmonary tuberculosis only.

City reports for week ended October 1, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	7	3	0	0	0	5	2	2	0	0	110
Cleveland	15	28	0	0	0	28	4	0	0	13	147
Columbus	4	12	0	0	0	8	1	1	1	1	68
Toledo	6	4	0	0	0	7	3	2	0	5	57
Indiana:											
Fort Wayne	1	1	0	0	0	3	1	0	1	1	25
Indianapolis	5	13	0	1	0	3	3	0	0	8	94
South Bend	2	2	0	0	0	1	0	0	0	0	10
Terre Haute	1	0	0	0	0	2	0	0	0	0	21
Illinois:											
Chicago	48	27	0	0	0	53	8	0	0	85	589
Springfield	1	11	0	0	0	1	1	0	0	0	14
Michigan:											
Detroit	38	25	1	0	0	20	7	3	1	60	235
Flint	6	14	0	0	0	1	1	2	0	4	33
Grand Rapids	5	7	1	0	0	0	1	1	0	4	26
Wisconsin:											
Kenosha	1	------	0	------	------	------	0	------	------	------	------
Milwaukee	15	6	0	0	0	0	0	3	0	18	105
Racine	3	2	0	0	0	0	0	0	0	2	12
Superior	1	1	0	0	0	0	0	0	0	0	5
WEST NORTH CENTRAL											
Minnesota:											
Duluth	5	3	0	0	0	1	0	0	0	5	24
Minneapolis	25	13	1	0	0	0	2	1	0	1	56
St. Paul	11	6	2	0	0	2	2	0	0	6	61
Iowa:											
Davenport	1	0	0	0	------	------	0	0	------	0	------
Des Moines	4	3	0	1	------	2	0	0	------	0	35
Sioux City	1	0	0	0	------	------	1	0	------	2	------
Waterloo	2	0	0	0	------	------	0	0	------	0	------
Missouri:											
Kansas City	5	3	0	0	0	4	2	2	0	1	79
St. Joseph	2	1	0	5	0	0	1	1	1	1	25
St. Louis	18	5	0	0	0	11	6	3	0	14	245
North Dakota:											
Fargo	0	5	0	0	0	0	0	0	0	0	6
Grand Forks	1	4	0	0	------	------	0	0	------	0	------
South Dakota:											
Aberdeen	1	0	0	0	------	------	0	0	------	1	------
Sioux Falls	1	0	0	0	------	------	0	0	------	0	------
Nebraska:											
Lincoln	1	3	0	0	0	0	0	0	0	0	9
Omaha	3	0	0	0	0	2	1	0	0	0	49
Kansas:											
Topeka	2	1	0	0	0	2	1	0	0	3	27
Wichita	2	3	0	1	0	0	2	3	0	3	21
SOUTH ATLANTIC											
Delaware:											
Wilmington	2	1	0	0	0	0	0	0	0	1	29
Maryland:											
Baltimore	8	6	0	0	0	20	11	1	2	40	209
Cumberland	0	0	0	0	0	2	1	1	0	0	6
Frederick	0	0	0	0	0	0	0	0	0	0	1
District of Columbia:											
Washington	7	10	0	0	0	9	4	3	0	0	144
Virginia:											
Lynchburg	1	1	0	0	0	0	1	1	0	0	7
Norfolk	0	2	0	0	0	4	1	0	0	0	------
Richmond	6	5	0	0	0	1	2	2	0	2	52
Roanoke	2	7	0	0	0	0	1	0	0	0	22
West Virginia:											
Charleston	1	4	0	0	0	0	1	1	1	0	14
Wheeling	3	0	0	0	0	1	1	0	0	0	23
North Carolina:											
Raleigh	1	0	0	0	0	3	1	0	0	4	15
Wilmington	1	1	0	0	0	0	0	0	0	0	7
Winston-Salem	2	5	0	0	0	2	2	0	0	1	18

City reports for week ended October 1, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
SOUTH ATLANTIC—continued											
South Carolina:											
Charleston	0	0	0	2	0	0	2	0	0	0	16
Columbia	0		0				0				
Greenville	1	2	0	0	0	1	0	2	0	0	5
Georgia:											
Atlanta	6	14	0	0	0	2	4	0	0	0	68
Brunswick	0	0	0	0	0	0	0	0	0	0	3
Savannah	0	0	0	0	0	0	2	0	0	0	30
Florida:											
Miami		1		0	0	3		0	0	0	31
St. Petersburg	0		0		0	1	0		0		11
Tampa	0	1	0	0	0	3	0	0	0	0	23
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0	3	0	0	0	0	0	0	0	0	17
Lexington		1		0	0	0		0	0	0	15
Louisville	3	7	0	0	0	5	5	3	0	4	58
Tennessee:											
Memphis	3	4	0	0	0	2	5	4	1	0	43
Nashville	4	3	0	0	0	3	4	5	1	2	42
Alabama:											
Birmingham	5	3	0	0	0	5	4	7	0	2	63
Mobile	0	2	0	0	0	1	1	0	0	0	20
Montgomery	1	1	0	0	0	0	0	4	0	0	
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	0	0	0	0			0	1		5	
Little Rock	1	4	0	0	0	1	2	0	0	0	
Louisiana:											
New Orleans	2	1	0	0	0	14	4	0	1	1	152
Shreveport	1	1	0	0	0	1	1	1	0	0	20
Oklahoma:											
Oklahoma City	1	0	0	1	0	1	2	1	0	0	22
Tulsa		5		0				0		0	
Texas:											
Dallas	3	11	0	2	0	1	2	1	1	0	40
Galveston	1	0	0	0	0	1	0	0	0	0	11
Houston	1	4	0	0	0	2	1	0	0	0	56
San Antonio	0	4	0	0	0	5	1	1	0	0	38
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	0	0	0	0	4	4
Great Falls	1	0	0	0	0	0	0	1	0	0	9
Helena	0	1	0	0	0	0	0	0	0	0	3
Missoula	0	2	0	1	0	0	1	0	0	0	4
Idaho:											
Boise	0	0	0	0	0	0	0	0	0	0	3
Colorado:											
Denver	5		1				3				
Pueblo	1	0	0	0	0	0	0	0	0	0	4
New Mexico:											
Albuquerque	0	1	0	0	0	6	2	0	1	0	18
Utah:											
Salt Lake City	2	1	0	5	0	2	2	2	0	13	24
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	4
PACIFIC											
Washington:											
Seattle	8	4	1	0			1	2		6	
Spokane	5	1	2	7			1	2		1	
Tacoma	3	0	0	1	0	0	1	0	0	0	21
Oregon:											
Portland	6	4	3	12	0	2	3	1	0	3	67
California:											
Los Angeles	9	14	2	0	0	29	4	0	1	12	
Sacramento	1	0	0	1	0	5	1	2	0	1	28
San Francisco	7	10	0	0	0	7	1	1	0	14	106

City reports for week ended October 1, 1927—**Continued**

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Maine:									
Portland	0	0	0	0	0	0	0	1	0
Massachusetts:									
Boston	0	1	1	0	0	0	2	31	7
Fall River	0	0	0	0	0	0	0	1	0
Worcester	0	0	0	0	0	0	0	1	1
Rhode Island:									
Pawtucket	0	0	0	0	0	0	0	2	0
Providence	1	0	0	0	0	0	1	0	0
Connecticut:									
New Haven	0	0	0	0	0	0	0	1	0
MIDDLE ATLANTIC									
New York:									
New York	5	1	5	5	0	0	14	40	4
New Jersey:									
Newark	0	0	0	0	0	0	1	3	0
Pennsylvania:									
Philadelphia	1	1	0	0	0	0	1	6	1
Pittsburgh	1	1	0	0	0	0	0	6	2
Reading	1	0	0	0	0	0	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	0	0	0	0	0	0	0	5	1
Cleveland	0	0	2	0	0	0	1	14	1
Columbus	0	0	0	1	0	0	0	0	0
Indiana:									
Fort Wayne	0	0	0	0	0	0	0	1	0
South Bend	0	0	0	0	0	0	0	1	0
Illinois:									
Chicago	6	3	3	1	1	1	4	12	1
Springfield	0	0	0	0	0	0	0	1	0
Michigan:									
Detroit [1]	1	0	0	1	0	0	1	10	1
Grand Rapids	0	0	0	0	0	0	0	3	0
Wisconsin:									
Milwaukee	1	0	0	0	0	0	0	2	1
WEST NORTH CENTRAL									
Minnesota:									
Duluth	0	0	0	0	0	0	0	2	1
Minneapolis	1	1	1	1	0	0	0	2	0
Iowa:									
Des Moines	0		0		0		0	1	
Waterloo	0		0		0		0	1	
Missouri:									
Kansas City	0	0	0	0	0	0	0	7	0
St. Louis	1	1	0	0	0	0	1	0	0
North Dakota:									
Fargo	0	0	0	0	0	0	0	2	0
South Dakota:									
Sioux Falls	0		0		0		0	1	
Kansas:									
Topeka	0	0	0	0	0	0	0	2	1
Wichita	0	0	0	0	0	0	0	3	1
SOUTH ATLANTIC									
Delaware:									
Wilmington	0	0	0	0	0	0	0	1	0
Maryland:									
Baltimore	1	1	0	0	0	2	1	0	0
Cumberland	0	0	0	0	0	0	0	1	0
District of Columbia:									
Washington	0	0	0	0	0	0	1	3	0
Virginia:									
Lynchburg	0	0	0	0	0	0	0	1	0
West Virginia:									
Wheeling	0	0	0	0	0	0	0	1	0

[1] Rabies (human): 1 case at Detroit, Mich.

City reports for week ended October 1, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
SOUTH ATLANTIC—continued									
North Carolina:									
Winston-Salem	0	0	0	0	0	1	0	0	0
South Carolina:									
Charleston [2]	0	0	0	0	1	0	0	0	0
Georgia:									
Savannah [3]	0	0	0	0	0	1	0	0	0
Florida:									
Miami	1	1	0	0	0	0		0	0
EAST SOUTH CENTRAL									
Kentucky:									
Covington	0	0	0	0	0	0	0	1	0
Tennessee:									
Memphis	0	0	0	0	0	1	0	0	0
Nashville	0	0	0	0	1	1	0	3	0
Alabama:									
Birmingham [3]	0	0	0	0	1	1	0	0	0
Montgomery	0	0	0	0	2	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	2	0	0	0
Louisiana									
New Orleans	0	0	1	1	3	2	0	0	0
Shreveport	0	0	0	0	0	2	0	0	0
Oklahoma:									
Oklahoma City	0	0	2	0	0	0	0	0	0
Texas.									
Dallas	0	0	0	0	0	0	0	4	1
Houston	0	0	0	0	0	1	0	0	0
MOUNTAIN									
New Mexico:									
Albuquerque	0	0	0	0	0	0	0	1	1
Utah:									
Salt Lake City	0	0	0	0	0	0	0	2	0
Nevada:									
Reno	0	0	0	0	0	0	0	1	1
PACIFIC									
Washington:									
Seattle	0		0		0		0	1	
Spokane	3		0		0		0	0	
Tacoma	0	0	0	0	0	0	0	9	2
Oregon:									
Portland	4	1	0	0	0	0	1	0	0
California:									
Los Angeles	0	0	2	0	1	0	1	6	1
Sacramento	0	0	0	0	0	0	0	0	1
San Francisco	0	0	0	2	1	1	1	1	0

[2] Dengue: 4 cases at Charleston, S. C.
[3] Typhus fever: 1 case and 1 death at Savannah, Ga., and 1 case at Birmingham, Ala.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended October 1, 1927, compared with those for a like period ended October 2, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had

about 1½ inches from the vertebral column, was employed. Ten animals were without dressings after 18 hours; in the remainder the dressings were permitted to remain throughout the experiment. By referring to Table 3 it will be noted, that among the ten animals on which dressings (types indicated in the table) were used, there were 8 cases of tetanus, whereas among 10 similarly treated, but with no dressings after 18 hours, there were no cases of tetanus. There were two deaths among this group, but the symptoms resembled snuffles and no toxin could be demonstrated in the excised "takes." The period from vaccination to onset of tetanus symptoms is indicated in Table 3 and ranged from 9 to 15 days.

Character of the "takes" in rabbits.—The animals without dressings developed severe "takes" (fig. 1) which soon became covered with dry, firm scabs and proceeded to heal. The animals with shields likewise developed severe "takes" (fig. 2), and at the time of death the lesions were moist, but the necrosis and accumulation of exudate were much less than in the case of the monkeys. In only one instance was a foul odor noted, and it was not very pronounced.

Diagnosis of post-vaccinal tetanus in rabbits.—The earliest symptom usually noted was an alert, hyper-excitable condition of the animal. This was soon followed by rigidity of one or more legs which would rapidly progress until the animal was twisted and drawn into abnormal positions. Later generalized convulsions and death would ensue. The diagnosis of post-vaccination tetanus was confirmed in every instance by excising and macerating the lesion in 100 c. c. of saline and injecting 0.4 c. c. of this extract into white mice. This dose uniformly killed the mice within 24 hours, except in the case of rabbit No. 2. In this case the mouse showed severe symptoms of tetanus but lived for several days. Control mice which received the same doses of extract plus tetanus antitoxin remained well in every case.

PREVENTION

It is realized that the malign influence of dressings on monkeys and rabbits vaccinated with a virus purposely contaminated with *B. tetani*, is not in itself conclusive evidence against the use of vaccination dressings in man. However, the experimental evidence is in such complete accord with the epidemiological evidence concerning 98 human cases as to constitute a strong confirmatory argument against dressings; in fact, the combined evidence seems strong enough to suggest that the practical elimination of post-vaccination tetanus may be accomplished by a general application of certain fundamentals of a proper vaccination technique.

Vaccination procedure.[2]—The essential factors of a proper technique will be briefly considered in the order of their probable importance.

[2] Those desiring a detailed consideration of the many phases of vaccination should consult Surg. J. P. Leake's "Questions and Answers on Smallpox Vaccination (6)."

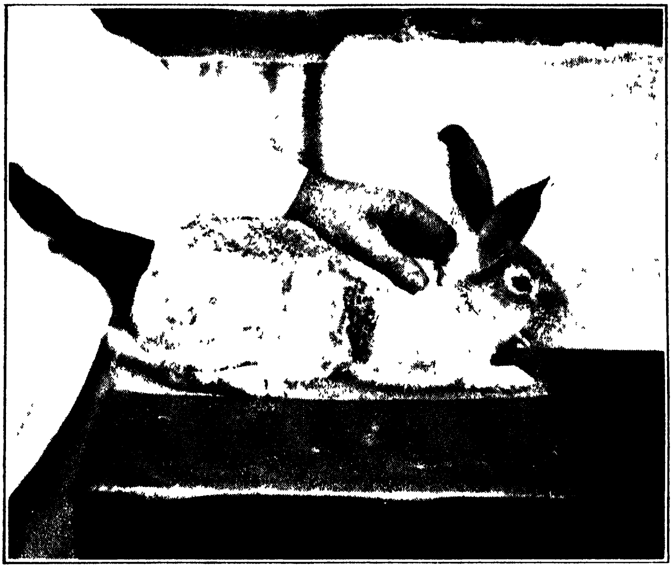


Fig 1 -Rabbit No 15 (No dressing after 18 hours) Photograph taken on sixteenth day after vaccination

Fig 2 Rabbit No 7 (Dressed with a celluloid shield) Photograph taken on sixteenth day after vaccination and a few hours before death from tetanus Note opisthotonos The shield is shown elevated from the lesion

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

CHOLERA ON VESSEL

Steamship "Morea"—At Hong Kong—September 2, 1927.—The steamship *Morea* from London via Singapore was reported at Hong Kong, September 2, 1927, infected with cholera. The *Morea* was reported at Colombo, Ceylon, September 14, and at Perim, September 21; destination, Suez.

THE FAR EAST

Report for week ended September 24, 1927.—The following report for the week ended September 24, 1927, was transmitted by the eastern bureau of the health section of the secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Iraq: Basra	0	0	10	8	0	0
Ceylon: Colombo	1	1	0	0	0	0
British India:						
Bombay	----	1	----	0	1	0
Tuticorin	----	0	----	1	0	0
Madras	----	0	----	7	2	1
Calcutta	----	0	----	11	2	2
Bassein	----	6	----	0	0	0
Rangoon	----	0	----	0	6	1
Dutch East Indies:						
Banjermasin	0	0	0	0	33	0
Makassar [1]	0	0	0	0	0	0
Balikpapan	0	0	0	0	5	0

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Siam: Bangkok	0	0	2	0	0	0
Straits Settlements: Singapore	0	0	1	1	0	0
French Indo-China: Turane	0	0	3	2	0	0
China:						
Amoy	0	0	11	----	0	0
Shanghai (Int. S.)	0	0	----	6	0	0
Canton	0	0	2	2	0	0
Newchwang	0	0	1	0	0	0
Tientsin	0	0	17	4	0	0
Kwantung: Dairen	0	0	1	0	0	0

[1] 1 plague-infected rat was found during the week.

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Aden Protectorate.—Aden, Perim.

Arabia.—Bahrein.

Persia.—Bender-Abbas, Bushire, Lingah, Mohammerah.

India.—Karachi, Chittagong, Cochin, Negapatam, Moulmein, Vizagapatam.

Portuguese India.—Nova Goa.

Federated Malay States.—Port Swettenham.

Straits Settlements.—Penang.

Dutch East Indies.—Batavia, Pontianak, Semarang, Cheribon, Padang, Belawan-Deli, Tarakan, Palembang, Menado, Sabang, Surabaya.

ASIA—continued

Sarawak.—Kuching.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

Portuguese Timor.—Dilly.

Philippine Islands.—Iloilo, Jolo, Cebu, Zamboanga, Manila.

French Indo-China.—Haiphong, Saigon and Cholon.

China.—Tsingtao.

Hong Kong.

Macao.

Wei-hai-wei.

ASIA—continued

Formosa.—Keelung, Takao.
Chosen.—Chemulpo, Fusan.
Manchuria.—Yingkow, Antung, Harbin, Mukden, Changchun.
Kwantung.—Port Arthur.
Japan.—Nagasaki, Yokohama, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns, Port Moresby.
New Guinea.—Port Moresby.
New Britain Mandated Territory.—Rabaul and Kokopo.
New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.
Western Samoa.—Apia.
New Caledonia.—Noumea.
Fiji.—Suva.

AUSTRALASIA AND OCEANIA—continued

Hawaii.—Honolulu
Society Islands.—Papeete.

AFRICA

Egypt.—Alexandria, Port Said, Suez.
Anglo-Egyptian Sudan.—Port Sudan, Suakin.
Eritrea.—Massaua.
French Somaliland.—Djibouti.
British Somaliland.—Berbera.
Kenya.—Mombasa.
Zanzibar.—Zanzibar.
Tanganyika.—Dar-es-Salaam.
Seychelles.—Victoria.
Portuguese East Africa.—Mozambique, Beira, Lourenço-Marques.
Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.
Mauritius.—Port Louis.
Reunion.—Saint Denis
Madagascar.—Majunga, Diego-Suarez, Tamatave.

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from—

Italian Somaliland.—Mogadiscio.
Aden Protectorate.—Kamaran.
Dutch East Indies.—Samarinda.
Union of Socialist Soviet Republics.—Vladivostok.

Belated information:

Week ended September 10. *Pondicherry* and *Karikal*—*Nil.*

Movement of infected ships:

The mail steamer *Montreal Maru* arrived September 20 from Chittagong infected with cholera.

BRAZIL

Mortality—Deaths from certain causes—Manaos—August, 1927.—During the month of August, 1927, 148 deaths from all causes were reported at Manaos, Brazil, including leprosy, 2; malaria, 45; paratyphoid fever, 1; tuberculosis, 17. Population, estimated, 88,872.

CANADA

Communicable diseases—Week ended October 1, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases from seven Provinces of Canada for the week ended October 1, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever				2				2
Influenza	33							33
Poliomyelitis				2	2		28	32
Smallpox				6		12	5	23
Typhoid fever	2	1	27	21	2	1	6	60

Communicable diseases—Quebec—Week ended October 1, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended October 1, 1927, as follows:

Disease	Cases	Disease	Cases
Chicken pox	5	Scarlet fever	49
Diphtheria	48	Tuberculosis	46
German measles	4	Typhoid fever	27
Measles	16	Whooping cough	5

Typhoid fever—Montreal—January 2–October 8, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	May 28, 1927	353	38
Jan. 15, 1927	4	3	June 4, 1927	239	37
Jan. 22, 1927	1	2	June 11, 1927	128	36
Jan. 29, 1927	3	1	June 18, 1927	86	
Feb. 5, 1927	1	0	June 25, 1927	75	23
Feb. 12, 1927	0	0	July 2, 1927	66	21
Feb. 19, 1927	1	2	July 9, 1927	52	10
Feb 26, 1927	1	1	July 16, 1927	39	4
Mar. 5, 1927	9	1	July 23, 1927	22	9
Mar. 12, 1927	203	4	July 30, 1927	23	10
Mar 19, 1927	383	14	Aug. 6, 1927	16	5
Mar. 26, 1927	568	22	Aug. 13, 1927	20	5
Apr 2, 1927	649	48	Aug 20, 1927	11	4
Apr. 9, 1927	386	40	Aug 27, 1927	8	3
Apr. 16, 1927	175	38	Sept. 3, 1927	27	
Apr. 23, 1927	125	43	Sept 10, 1927	17	
Apr. 30, 1927	105	23	Sept. 17, 1927	13	2
May 7, 1927	106	19	Sept 24, 1927	6	3
May 14, 1927	367	16	Oct. 1, 1927	18	
May 21, 1927	770	26	Oct 8, 1927	14	1

Vital statistics—Quebec—July, 1927.—Births and deaths in the Province of Quebec for the month of July, 1927, were reported as follows:

Estimated population	2,604,000
Births	6,781
Birth rate per 1,000 population	31.25
Deaths	2,666
Death rate per 1,000 population	12.28
Deaths under 1 year	774
Infant mortality rate	114.14
Deaths from—	
Accidents (all)	97
Cancer	124
Cerebrospinal meningitis	10
Diabetes	16
Diarrhea	247
Deaths from—Continued.	
Diphtheria	31
Heart disease	214
Influenza	27
Measles	11
Pneumonia	119
Scarlet fever	14
Syphilis	3
Tuberculosis (pulmonary)	200
Tuberculosis (other forms)	60
Typhoid fever	55
Whooping cough	40

CHINA

Epidemic pneumonic plague—Mongolia—October 11, 1927.—Under date of October 11, 1927, an epidemic outbreak of pneumonic plague, with approximately 200 deaths, was reported on the northern frontier of Mongolia, China.

CUBA

Communicable diseases—Habana—September, 1927.—During the month of September, 1927, communicable diseases were reported in Habana, Cuba, as follows:

Disease	New cases	Deaths	Remaining under treatment Sept 30, 1927	Disease	New cases	Deaths	Remaining under treatment Sept. 30, 1927
Chicken pox	2		8	Measles	12		24
Diphtheria	5	1	1	Paratyphoid fever			1
Leprosy	3	1	16	Scarlet fever	1		1
Malaria [1]	56		58	Typhoid fever [1]	45	3	63

[1] Many of these cases from the interior.

Typhoid fever—Malaria—Santiago de Cuba[1]*—September 25–October 1, 1927.*—During the week ended October 1, 1927, 8 cases of typhoid fever with 2 deaths were reported at Santiago de Cuba. It was stated that there were 104 cases of malaria officially reported in the city on October 1, 1927.

GERMANY

Cancer—Tuberculosis—Berlin—1926.—During the year 1926 there were reported at Berlin, Germany, 6,195 deaths from cancer and related causes, and 3,930 deaths from tuberculosis of the respiratory organs. Population on date of taking census, August 1, 1927, 4,164,631.

Poliomyelitis—Leipzig—September 29, 1927.—Under date of September 29, 1927, a serious outbreak of acute poliomyelitis was reported at Leipzig, Germany.

JAMAICA

Smallpox (alastrim)—August 28–September 24, 1927.—During the four-week period ended September 24, 1927, 7 cases of smallpox (reported as alastrim) were reported in the Island of Jamaica, at localities other than Kingston. During the week ended September 17, no case was reported.

Other communicable diseases.—During the same period other communicable diseases were reported in the Island of Jamaica as follows:

Disease	Cases		Disease	Cases	
	Kingston	Other localities		Kingston	Other localities
Chicken pox	4	6	Poliomyelitis		2
Dysentery	1	16	Puerperal fever	1	1
Erysipelas		1	Tuberculosis	15	49
Leprosy	1		Typhoid fever	19	71

Population of Kingston, 62,707; Island, 926,000.

[1] PUBLIC HEALTH REPORTS, Oct. 14, 1927, p. 2532.

MADAGASCAR

Plague—July 16–31, 1927.—During the two-week period ended July 31, 1927, 25 cases of plague with 23 deaths, occurring in four provinces, were reported in Madagascar. The distribution according to provinces was as follows: Ambositra—cases 5, deaths 5; Itasy—cases 4, deaths 4; Moramanga—cases 4, deaths 4; Tenanarive—cases 12, deaths 10. The distribution of occurrence according to type was as follows: Bubonic, 15; pneumonic, 8; septicemic, 2.

MAURITIUS

Plague—Port Louis—May–June, 1927.—Under date of August 4, 1927, a fatal case of plague was reported to have occurred at Port Louis, Island of Mauritius, during the period May–June, 1927.

SENEGAL

Plague—Yellow fever—September 19–25, 1927.—During the week ended September 25, 1927, 129 cases of plague with 75 deaths were reported in Senagal, West Africa. The distribution according to locality was as follows: *Interior*—Baol region, cases 13, deaths 7; Cayor region, cases 104, deaths 58; in Louga district, which was stated to have been immune to plague for a number of years, cases 5, deaths 4; and in Thiès district, cases 5, deaths 4. One case of plague with 1 death was reported at Dakar and 1 case with 1 death at Rufisque.

Yellow fever.—During the period under report, 3 fatal cases of yellow fever were reported in Senegal, of which 1 case, in a Syrian, occurred at Pout, and 2 cases, 1 in a European physican and 1 in a Portuguese half-caste, at Thiès.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended October 21, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	Aug 28–Sept 3	18	1	
Canton	do	10	6	
Swatow	Aug 28–Sept 10			Prevalent.
Tientsin	Aug 27–Sept 10	4		
India:				
Bombay	Aug. 21–Sept. 3	4	3	
Calcutta	Aug 28–Sept. 3	18	10	
Madras	Sept 4–10	8	11	
Iraq:				
Basra	Sept. 11–17	9	9	
Siam				Aug. 21–27, 1927: Cases, 25; deaths, 15
				Apr. 1–Aug 27, 1927: Cases, 703; deaths, 483
Cholera on vessel:				
Steamship Morea	Sept. 2			At Hong Kong, from London via Singapore. At Colombo, Ceylon, Sept. 14; Perim, Sept. 21 Destination, Suez

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended October 21, 1927—Continued

PLAGUE

Place	Date	Cases	Deaths	Remarks
Ceylon:				
Colombo	Aug. 28-Sept. 3	1	1	
China:				
Mongolia	Oct. 11		200	Approximate. Outbreak on northern border. Type pneumonic
Egypt				Jan. 1-Sept. 9, 1927: Cases, 66; corresponding period, year 1926, cases, 128.
Alexandria	Aug. 27-Sept. 2	1		
India:				
Bombay	Aug. 21-Sept. 3	3	2	
Calcutta	do	18	10	
Madras presidency	Aug. 14-20	176	86	
Rangoon	Aug. 28-Sept. 3	1		
Java:				
Batavia	do	18	18	Province.
Surabaya	Aug. 14-20	4	4	
Madagascar				July 16-31, 1927: Cases, 25; deaths, 23
Provinces—				
Ambositra	July 16-31	5	5	Bubonic.
Itasy	do	4	4	Bubonic, 1; pneumonic, 2; septicemic, 1.
Moramanga	do	4	4	Bubonic, 4, pneumonic, 1; septicemic, 1.
Tananarive	do	12	10	Bubonic, 7, pneumonic, 5; of which cases 2; deaths, 2 (bubonic) were at Tananarive Town
Mauritius:				
Port Louis	May-June	1	1	
Senegal				Sept. 19-25, 1927: Cases, 129; deaths, 75.
Interior—				
Baol region	Sept. 19-25	13	7	
Cayor region	do	104	58	
Louga district	do	5	4	Stated to have been immune for a number of years.
Thiès district	do	5	4	
Urban—				
Dakar	do	1	1	
Rufisque	do	1	1	
Siam				Apr. 1-Aug. 27, 1927: Cases, 10; deaths, 7.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Brazil:				
Bahia	Aug. 7-13	1		
Porto Alegre	Aug. 1-31	3		
Rio de Janeiro	Sept. 4-17	3	6	
Canada:				
Alberta	Sept. 25-Oct. 1	5		
Manitoba—				
Winnipeg	Oct. 2-8	1		
Ontario	Sept. 25-Oct. 1	6		
Ottawa	Oct. 2-8	15		
Saskatchewan	Sept. 25-Oct. 1	12		
China:				
Tientsin	Sept. 4-10		4	
Great Britain:				
England and Wales	Sept. 11-24			Cases, 251.
Sheffield	Sept. 18-24	1		
India:				
Bombay	Aug. 21-Sept. 3	7	5	
Calcutta	Aug. 28-Sept. 3	4	2	
Rangoon	do	2	1	
Iraq:				
Basra	Sept. 11-17	1	1	
Italy:				
Florence	Sept. 18-24	1		
Jamaica				Aug. 28-Sept. 24, 1927: Cases, 7 (Reported as alastrim.)
Java:				
East Java and Madura—				
Surabaya	Aug. 14-20	[illegible]		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended October 21, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Mexico:				
Torreon	Sept. 25-Oct. 1		2	
Siam				Aug. 21-27, 1927: Cases, 25; deaths, 2 Apr 1-Aug. 27, 1927: Cases, 223; deaths, 52.
Venezuela:				
Maracaibo	Sept 6-12		2	

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	Sept. 1-10	1		In native.
Egypt:				
Cairo	May 21-June 24	5	4	
Guatemala:				
Guatemala	Aug 25-31		1	
Mexico:				
Mexico City	Sept 19-24	5		Including municipalities in Federal District
Palestine				Sept 6-19, 1927 Cases, 5, in four localities
Poland				Aug. 7-24, 1927: Cases, 24; deaths, 2
Syria:				
Aleppo	Sept 11-17	2		
Union of South Africa:				
Cape Province	Aug 20-27			Outbreaks in 3 districts.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Senegal:				
Pout	Sept 19-25	1	1	In a Syrian.
Thies	do	2	2	1 in European doctor; 1 in Portuguese half-caste.

Reports Received from June 25 to October 14, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-Aug. 27	31	8	
Canton	May 1-Aug 27	47	23	
Foochow	July 24 Aug. 27			Present.
Hong Kong	July 17-23	2	2	
Kulangsu	June 21	1		
Shanghai	June 19-25	2		
Do	July 31-Sept. 3		61	In international settlement and French concession.
Swatow	May 15-Aug. 27	138	13	
India	Apr 17-Aug. 13			Cases, 148,274; deaths, 82,048.
Bombay	May 8-Aug 20	121	53	
Calcutta	May 8-Aug. 27	651	387	
Karachi	May 29-June 4	1	1	
Madras	June 19-Sept. 3	789	410	
Rangoon	May 8-Aug. 13	18	14	
India, French settlements in	Mar. 30-July 16	171	109	
Indo-China (French)	Apr. 1-Aug. 10			Cases, 13,640.
Annam	do	2,936		
Cambodge	do	335		
Cochin-China	do	1,519		
Saigon	June 4-July 21	10	4	
Laos	July 11-Aug. 10	137		
Tonkin	Apr. 1-Aug. 10	9,713		

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 14, 1927—Continued

CHOLERA—Continued

Place	Date	Cases	Deaths	Remarks
Iraq:				
Baghdad	July 24-30	29	18	
Basra	July 17-Sept. 10	374	279	
Japan:				
Yokohama	July 31-Aug 6	1	1	
Persia:				
Abadan	July 24-Aug. 13	215	183	
Ahwaz	July 31-Aug. 13	20	13	
Minab	Aug. 7-13		23	
Mohammerah	July 17-Aug. 27	194	155	
Nasseri	July 19-31		10	
Philippine Islands:				
Manila	July 17-Aug. 27	2		
Bulacan Province	June 7-July 8	3	2	
Leyte Province—				
Barugo	June 29	1	1	
Carigara	June 23	1	1	Final diagnosis not received.
Palo	May 18	1		
Siam	May 1-Aug. 20			Cases, 291, deaths, 177.
Bangkok	do	45	14	
On vessel:				
S. S. Adrastus	Reported Aug. 6	1	1	At Yokohama, Japan.
S. S. War Mehtar (oil tanker).	Aug. 4	1	1	At Saflagha, Egypt.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	Aug. 21 31	1		
Oran	Aug. 21-Sept. 10	5	4	
Argentina	Jan 1-Aug. 2			Cases, 80; deaths, 44.
Buenos Aires	Apr 10-May 7	4	3	
Cordoba	Jan. 11-Aug. 6	52	29	
Corrientes	June 1	1	1	
Entre Rios	Mar. 29-Aug 13	8	1	
Santa Fe	Apr 28-May 16	4	3	
Territory—				
Chaco—				
Barranqueras	May 29	2	2	
Formosa	June 25	3	2	
Pampa	July 27-Aug. 2	4		
Rio Negro	Aug. 6	1		
City-				
Merou	Reported July 14			Present.
Rossario	May 7	1	1	
Santa Fe	May 16	4	2	
Azores:				
St. Michaels Island	May 15-Aug. 27	6		
Ribeira Grande	June 12-18	1		
Brazil.				
Sao Paulo	June 3-9	1	1	
British East Africa:				
Kenya	Apr 24-July 31	73	14	
Mombassa	July 24-30	1	1	
Nairobi	May 22-28	6		
Tanganyika	Mar 29-May 28		37	
Do	July 24-Aug 6		10	
Uganda	Jan. 1-Feb. 28	138	121	
Do	Mar. 27-June 18	306	300	
Canary Islands:				
Laguna district—				
Tejina	June 17	1		
Las Palmas	Oct 8	4		
Ceylon:				
Colombo	May 1-Aug. 27	18	11	Plague rats, 4.
China:				
Amoy	July 3-23			Present in surrounding country.
Tientsin	Aug. 14-20	2		
Ecuador:				
Guayaquil	June 1-July 31			Rats taken, 48290; found infected, 34.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 14, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Egypt	May 1-Sept. 3			Cases, 15; deaths, 4.
Alexandria	June 4-Sept. 2	3		
Beni-Souef	June 4-July 13	5	2	
Biba	June 4-10	1		At Nama.
Dakhalia	June 24-July 9	6	1	
Minia	Aug. 8-9	4		
Port Said	June 24-July 21	4	1	
Suez	Sept. 4	1		
Tanta district	June 4-10	1		
Greece	May 1-June 30	4	3	
Athens	June 1-Aug. 29	3		Including Piraeus.
Mytilene	Aug. 9	1		
Patras	May 30-Sept. 4	8	1	
Hawaii Territory:				
Hamakua	July 15			1 plague rodent.
Honokaa	May 17-23	2	2	
Kukuihaele	Aug. 12-17	1	1	1 plague rodent.
Paauilo	July 26-Aug. 1		4	
India	Apr. 17-July 16			Cases, 22,523; deaths, 8,580.
Bombay	May 8-Aug. 20	95	81	
Madras	May 1-Aug. 13	706	344	
Rangoon	May 8-Aug. 27	63	58	
Indo-China (French)	Apr. 1-Aug. 10	50		
Kwang-Chow-Wan	May 21-July 31	73		
Iraq:				
Baghdad	Apr. 8-May 28	12	1	
Java:				
Batavia	May 1-Aug. 27	243	244	Province.
East Java and Madura	May 22-July 16	28	27	
Pasoeroean Residency	May 9			Outbreak reported at Nagdiwano.
Surabaya	Apr. 17-Aug. 6	56	55	
Madagascar				Mar. 16-Apr. 30, 1927; Cases, 256; deaths, 135.
Province—				
Ambositra	Mar. 16-July 15	94	87	
Antsirabe	Mar. 16-May 15	8	8	
Miarinarivo (Itasy)	Mar. 16-July 15	65	59	
Moramanga	May 16-July 15	24	23	
Tananarive	Mar. 16-July 15	221	194	
Tananarive Town	Mar. 16-June 30	22	20	
Nigeria	Mar. 1-May 31	228	177	
Peru	Apr.-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	do	13	4	
Lima City	Apr. 1-30	5	1	
Senegal	May 23-Sept. 11			Cases, 901; deaths, 531.
Baol	June 2-Sept. 18	127	62	
Cayor Frontier	July 4-Sept. 18	712	415	
Dakar	June 20-Sept. 18	145	93	
Facel	July 6	17	8	
Guindel	June 20-26	11	2	
M'Bour	July 6-10	28	23	
Medina	June 13-19	2	2	
Pout	July 4-10	1		
Rufisque	May 23-Sept. 18	222	166	
Thies district	do	29	11	
Tivaouane	June 2-July 17	50	32	
Siam	Apr. 1-Aug. 20			Cases, 10; deaths, 7.
Bangkok	May 8-June 11	2	1	
Syria:				
Beirut	June 11-July 10	3		
Tunisia	Apr. 21-July 10	144		
Tunis	July 25-Aug. 1	1		
Turkey:				
Constantinople	May 13-19	1		
Union of South Africa:				
Cape Province—				
Maraisburg district	May 1-14	2	2	Native.
Orange Free State—				
Edenburg district	July 17-26	3	3	Natives; on farm.
Rouxville district	July 24-Aug. 6	2	2	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 14, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
On vessel:				
S. S. Avoroff	June 24-30	1		On Greek warship at port of Athens.
S. S Capafric	Aug. 23	3	1	At Duala, French Cameroons, from Nigeria.
S. S. Elcano	Aug. 19	1		At Piraeus, Greece.
S. S. Madonna	Aug. 24	1		At Dakar, Senegal, from ports south.
S. S. Ransholm	Aug. 5	3		At Gefle, Sweden, from Rufisque, Senegal.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr 21-July 31			Cases, 882.
Algiers	May 11-June 30	8		
Oran	May 21-Sept. 10	51		
Angola	June 1-July 15	18		
Arabia:				
Aden	July 17-Aug. 1	2	1	
Brazil.				
Porto Alegre	July 1-31	5		
Rio de Janeiro	May 22-Sept 3	20	13	
British East Africa.				
Kenya	Apr 24-May 14	7	14	
Tanganyika	Mar 29-June 18	2	22	
Zanzibar	Apr 1-May 31	19	7	
British South Africa				
Northern Rhodesia	Apr 30-Aug 26	161	3	
Canada	June 5-Sept 24			Cases, 540.
Alberta	June 12-Sept. 24			Cases, 110.
Calgary	June 12-Aug. 27	9		
British Columbia—				
Vancouver	May 23-Sept 4	4		
Manitoba	June 5-Sept. 17			Cases, 38.
Winnipeg	June 12-Sept. 16	21		
Nova Scotia	Sept. 11-17	1		
Ontario	June 5-Sept. 24			Cases, 215.
Ottawa	June 12-Oct 1	141		
Sarnia	Aug 7-13	1		
Toronto	June 19-Sept 24	11		
Quebec	June 19-Aug. 27	15		
Saskatchewan	June 12-Sept 24			Cases, 126.
Moose Jaw	Aug. 14-Sept. 24	21		
Regina	July 17-Aug 27	10		
Ceylon	May 1-7			Cases, 3; deaths, 1.
Colombo	July 31-Aug. 6	1	1	
China:				
Amoy	May 8-28	1		
Do	July 3-16			Present in surrounding country.
Antung	July 4-31	3		
Chefoo	May 8-14			Present.
Foochow	May 8-Aug. 27			Do
Hong Kong	May 8-Aug. 20	20	19	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-July 30	8		
Dairen	May 2-July 3	10	5	
Fushun	May 15-July 30	10		
Harbin	June 13-July 10	4		
Kaiyuan	July 3-9	2		
Mukden	May 22-July 30	6		
Pensihu	July 3-9	1		
Ssupingkai	May 8-July 9	3		
Tientsin	May 8-July 30	18		
Chosen	Feb 1-June 30			Cases, 507; deaths, 205.
Chinnampo	Apr 1-May 31	2		
Fusan	Apr 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr. 1-30	1		
Curaçao	May 29-June 4	1		Alastrim.
Ecuador:				
Guayaquil	June 1-30	2		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 14, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Egypt	May 7-July 29			Cases, 21; deaths, 3.
Alexandria	May 21-June 17	4	1	
Cairo	Jan. 22-Apr. 15	14	3	
France	Apr. 1-July 31			Cases, 201.
Lille	July 24-30	1		
Paris	May 21-July 31	14	2	
Gold Coast	Mar. 1-June 30	41	7	
Great Britain:				
England and Wales	May 22-Sept 10			Cases, 2,964.
Birmingham	Aug. 14-20	1		
Bradford	May 29-June 11	2		
Cardiff	June 19-July 2	4		
Leeds	July 17-Sept 3	13		
Liverpool	July 17-30	1		
London	May 15-June 18	2		
Newcastle upon Tyne	June 12-Aug 13	5		
Sheffield	June 12-Aug 6	25		
Stoke-on-Trent	Aug 21-27	1		
Scotland—				
Dundee	May 29-Sept. 3	6		
Greece	June 1-30	14		
Salonika	July 12-Aug. 15		2	
Guatemala:				
Guatemala City	June 1-30		9	
Guinea (French)	June 4-10	9		
India	Apr. 17-Aug 13			Cases, 72,048; deaths, 19,005.
Bombay	May 28-Aug 20	232	150	
Calcutta	May 8-Aug 27	390	301	
Karachi	May 15-Aug 6	10	5	
Madras	May 22-Sept. 3	26	6	
Rangoon	May 8-Aug 27	183	155	
India, French Settlements in	Mar 20-June 18	174	111	
Indo-China (French)	Mar 21-Aug. 10			Cases, 318.
Saigon	May 14-Aug. 19	3	1	
Iraq.				
Baghdad	Apr. 10-Sept 4	3	1	
Basra	do	4	3	
Italy	Apr 10-May 21	13		
Rome	June 13-July 10	2		
Jamaica	May 29-Aug 27	30		Reported as alastrim.
Japan	Apr. 3-May 7			Cases, 19.
Nagasaki City	June 20-Aug. 14	26	7	
Taiwan Island	May 21-31	1		
Java.				
Batavia	May 22-Aug. 20	7		
East Java and Madura	Apr. 24-July 30	13		
Latvia	Apr. 1-30	1		
Mexico	Mar. 1-May 31			Deaths, 557.
Durango	June 1-30		1	
La Oroya	Apr. 1-June 30			Present.
Monterey	July 1-31	6	4	
San Luis Potosi	May 29-Aug. 13		11	
Tampico	June 1-July 31	1	2	
Torreon	Aug. 7-13		1	
Morocco	Apr. 1-July 31	207		
Netherlands India.				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in 2 localities.
Pasir Residency	Apr. 30-May 6			Epidemic outbreak.
Samarinda Residency	May 21-27			Do.
Nigeria	Mar. 1-June 30	2,352	570	
Paraguay:				
Asuncion	July 10-23		2	
Persia:				
Teheran	Feb. 21-June 22		14	
Poland	Apr. 10-Aug. 6	20	2	
Portugal:				
Lisbon	May 29-Sept. 17	19	1	
Oporto	Sept. 3-9	1		
Senegal:				
Medina	July 4-10	7		
Siam	Apr. 1-Aug. 20			Cases, 198; deaths, 50.
Bangkok	May 1-July 23	13	7	
Spain:				
Madrid	Aug. 1-31		1	
Valencia	May 29-June 4	2		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 14, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Straits Settlements	June 12-18			Cases, 3.
Singapore	Apr. 1-June 18	7	2	
Sumatra:				
Medan	June 5-Aug 20	3		
Switzerland.				
Berne	June 26-July 2	1		
Syria:				
Damascus	Aug. 11-31	3		
Tunisia	Apr. 1-June 10			Cases, 10.
Tunis	June 1-10	1		
Union of South Africa:				
Cape Province	July 17-Aug 20			Outbreaks.
Elliott district	May 11-June 10			Do.
Idutywa district	July 3-9			Do.
Kalanga district	May 11-June 10			Do.
Mount Ayliffe district	July 31-Aug 6			Do.
Orange Free State	Aug. 7-13			Do.
Transvaal—				
Barberton district	May 1-7			Do.
Venezuela:				
Maracaibo	July 12-18		1	

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr 21-July 20			Cases, 399; deaths, 39.
Algiers	May 11-Aug 31	26		
Oran	May 21-Aug 31	34		
Bulgaria	Mar. 1-July 10			Cases, 226; deaths, 20.
Sofia	June 4-Aug. 5	2		
Chile				
Antofagasta	Apr 16-May 31	1		
Concepcion	May 29-June 4		1	
La Calera	Apr. 16-May 31	1		
Ligua	Mar. 16-31	2		
Puerto Montt	Apr 16-May 31	1		
Santiago	do	5	1	
Talcahuano	July 10-16		1	
Valparaiso	Apr 16-Sept. 3	5	3	
China.				
Manchuria—				
Harbin	July 25-31	3		
Mukden	May 29-June 4	1		
Tientsin	July 10-16	1		
Chosen	Feb 1-June 30			Cases, 721; deaths, 60.
Chemulpo	May 1-July 31	1		
Gensan	do	4		
Seoul	Apr. 1-July 31	32	3	
Czechoslovakia	do			Cases, 55.
Egypt	May 28-July 29			Cases, 120; deaths, 18.
Alexandria	May 21-Aug. 5	13	5	
Cairo	Jan. 15-May 20	37	12	
Estonia	Apr. 1-June 30			Cases, 5.
Greece	June 1-30	2		
Athens	June 1-July 31		9	
Iraq:				
Baghdad	Apr. 24-30	1		
Irish Free State.				
Cork County	July 3-9	1		In urban district.
Latvia	Apr. 1-July 31	32		
Lithuania	Feb 1-July 31	347	42	
Mexico	Feb. 2-May 31			Deaths, 140.
Mexico City	May 29-Sept 17	54		Including municipalities in Federal district
San Luis Potosi	July 31-Aug 6		1	
Morocco	Apr. 1-Aug. 20	952		
Palestine	May 24-Sept 5			Cases, 19.
Haifa	May 24-Aug. 29	8		
Jaffa	Aug. 2-15	2		
Jerusalem	June 28-Aug. 15	3		
Mahneim	May 17-23	1		In Safad district.
Nazareth	July 19-25	1		
Safad	May 17-Aug. 8	10		
Peru				
Arequipa	Apr. 1-30		1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 14, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Poland	Apr. 10-Aug. 13	1,056	98	
Portugal:				
Lisbon	May 29-June 4	1		
Oporto	Aug. 20-27	1		
Rumania	Apr 3-July 23	956	64	
Spain:				
Seville	Aug 19-25		2	
Tunisia	Apr 22-July 20			Cases, 158.
Tunis	July 5-Aug 21	2		
Turkey.				
Constantinople	May 13-19		2	
Union of South Africa	Apr 1-30			Cases, 55, deaths, 8, native. In Europeans, cases, 2.
Cape Province	Apr. 1-Aug 6	42	5	
Albany district	June 5-11			Outbreaks
East London	May 22-28	1		Do
Glen Gray district	May 1-7			Do.
Kentani district	June 26-July 2			Do
Port Elizabeth	Aug 7-13	1		
Qumbu district	May 1-7			Do
Umzimkulu district	June 26-July 2			Do.
Natal	Apr 1-Aug 6	7	3	
Impendhle district	June 5-11			Do.
Orange Free State	Apr. 1-July 23	5		
Transvaal	Apr 1-30	1		
Johannesburg	July 3-Aug 20	19	5	
Yugoslavia	May 1-Aug 31			Cases, 24, deaths, 5.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Ashanti				
Obuasi	Aug 6	1	1	
Dahomey (West Africa)				
Porto Novo	July 1	1	1	In Syrian woman.
Gold Coast	Apr 1-June 30	60	22	
Do	Aug 4	2		
Ivory Coast	July 29	1	1	
Liberia.				
Monrovia	May 29-July 8	4	5	
Senegal	May 27-July 31			Cases, 5, deaths, 2.
Dakar	July 9	1		
Do	Aug 8	2	2	
Do	Sept 17			Present.
Island of Goree	Aug 22-Sept 4	2	2	
Khembole	Aug. 1-14	3		
M'Bour	May 27-June 10	5	5	
Ouakam	June 2-Aug. 14	4	2	
St. Louis	Aug 1-14	2	2	
Thies	July 10	1	1	In European.
Do	Sept 12-18	1	1	
Tiaroye	Aug. 22-Sept 4	1	1	
Tivaouane	May 27-Sept. 11	6	5	
Togoland:				
Menutza	Aug. 15-21	1	1	

TREASURY DEPARTMENT

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SPECIAL ARTICLES

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON
1927

UNITED STATES PUBLIC HEALTH SERVICE.

HUGH S. CUMMING, *Surgeon General.*

DIVISION OF SANITARY REPORTS AND STATISTICS.

Asst. Surg. Gen. R. C. WILLIAMS, *Chief of Division*

The PUBLIC HEALTH REPORTS are issued weekly by the United States Public Health Service through its Division of Sanitary Reports and Statistics, pursuant to acts of Congress approved February 15, 1893, and August 14, 1912.

They contain: (1) Current information of the prevalence and geographic distribution of preventable diseases in the United States in so far as data are obtainable, and of cholera, plague, smallpox, typhus fever, yellow fever, and other communicable diseases throughout the world. (2) Articles relating to the cause, prevention, or control of disease. (3) Other pertinent information regarding sanitation and the conservation of the public health.

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PUBLIC HEALTH REPORTS

VOL. 42 OCTOBER 28, 1927 NO. 43

PUBLIC HEALTH REPORTS

PREVALENCE OF POLIOMYELITIS IN THE UNITED STATES

Reports of poliomyelitis for the week ended October 15, 1927, showed a decrease of 12 per cent in the number of cases as compared with the preceding week. Forty-four States reported 579 cases of poliomyelitis for the week ended October 15, 1927, 660 cases for the week ended October 8, and 635 cases for the week ended October 1, 1927.

Reports for the years 1925, 1926, and 1927 are available from 36 States. These States reported 447 cases of poliomyelitis for the week ended October 15, 1927, 66 cases for the corresponding week of the year 1926, and 177 cases for the week in 1925.

Comparing the weeks ended October 8 and 15, 1927, the New England, Middle Atlantic, and East and West North Central States show decreases for the later week in number of cases. The figures for Ohio for these weeks (76 and 77 cases, respectively) are the lowest for several weeks. Comparatively few cases of poliomyelitis were reported for these weeks in the Southern and Southeastern States, although Arkansas had 13 cases for the later week as compared with only 1 for the week ended October 8. Little change was noted in the Mountain States as a whole, but the number of cases in Colorado increased from 4 to 11. A decrease was reported in California and an increase in the State of Washington.

A table giving a comparison of the telegraphic reports of poliomyelitis for two weeks of the years 1925, 1926, and 1927 appears on page 2663. Figures for the week ended October 22, 1927, are published on page 2672.

AMENDMENTS TO THE INTERNATIONAL RULES OF ZOOLOGICAL NOMENCLATURE

Important Notice to Zoologists, Physicians, Veterinarians, and Others using Zoological names

Upon unanimous recommendation by the International Commission on Zoological Nomenclature, the International Zoological Congress which met at Budapest, Hungary, September 4–9, 1927, adopted a very important amendment to article 25 (Law of Priority)

which makes this article, as amended, read as follows (*italicized type represents the amendment;* roman type represents the old wording):

ARTICLE 25. The valid name of a genus or species can be only that name under which it was first designated on the condition—

(*a*) That (*prior to January 1, 1931*) this name was published and accompanied by an indication, or a definition, or a description; and

(*b*) That the author has applied the principles of binary nomenclature.

(*c*) *But no generic name nor specific name published after December 31, 1930, shall have any status of availability (hence, also, of validity) under the rules, unless and until it is published either—*

(1) *With a summary of characters (seu diagnosis; seu definition; seu condensed description) which differentiate or distinguish the genus or the species from other genera or species;*

(2) *Or with a definite bibliographic reference to such summary of characters (seu diagnosis; seu definition; seu condensed description). And further—*

(3) *In the case of a generic name, with the definite unambiguous designation of the type species (seu genotype; seu autogenotype; seu orthotype).*

The purpose of this amendment is to inhibit two of the most important factors which heretofore have produced confusion in scientific names. The date January 1, 1931, was selected (instead of making the amendment immediately effective) in order to give authors ample opportunity to accommodate themselves to the new rule.

The Commission unanimously adopted the following resolution:

(*a*) It is requested that an author who publishes a name as new shall definitely state that it is new, that this be stated in only one (i. e., in the first) publication, and that the date of publication be not added to the name in its first publication.

(*b*) It is requested that an author who *quotes* a generic name, or a specific name, or a subspecific name shall add at least once the author and year of publication of the quoted name or a full bibliographic reference.

The foregoing resolution was adopted in order to inhibit the confusion which has frequently resulted from the fact that authors have occasionally published a given name as "new" in two to five or more different articles of different dates—up to five years in exceptional cases.

The three propositions submitted by Dr. Franz Poche, of Vienna, failed to receive the necessary number of votes in commission to permit of their being recommended to the Congress. Out of a possible 18 votes for each proposition, Poche's proposition I received 9 votes, II received 6 votes, and III received 7 votes.

Zoological medical, and veterinary journals throughout the world are requested to give to the foregoing the widest possible publicity in order to avoid confusion and misunderstanding.

C. W. STILES, *Secretary to Commission.*

THE EPIDEMIOLOGY OF TYPHUS FEVER IN IRELAND

By M. R. King, *Passed Assistant Surgeon, United States Public Health Service*

Six miles north of the city of Dublin is a small stone church which is said to have been founded by St. Dulagh about the year 600 A. D. It is the oldest Irish church in which divine service is still conducted. In the portion of this ancient building which forms the vestry is to be seen a small aperture, designated the "leper's window," through which the unclean were permitted to witness the services held within. The presence of this ancient window bears interesting evidence of the practice in Ireland, as elsewhere in Europe during the early Christian period, of segregating persons afflicted with loathsome cutaneous diseases. Since the term "leprosy" in the early Irish records seems to denote merely cutaneous disease, not of any particular kind or variety, it is probable that very little actual leprosy has ever existed in Ireland, and that the preventive measures were usually enforced against persons afflicted with loathsome diseases not necessarily dangerous from the standpoint of transmission to others. Although the ancient Irish records emphasize the importance of segregating persons afflicted with leprosy, there is scarcely any mention of such precautions with patients afflicted with fever, although, curiously enough, the early records indicate that the latter disorder has always been the most prevalent and devastating of all diseases. There is no record or evidence available such as the "leper's window" to indicate segregation of fever patients from the populace.

Just as we now know that people in earlier times included under the term "leprosy" many different skin disorders, that the term covered a multitude of afflictions which are now classified as separate specific entities, so the term "fever" included a great variety of diseases, all having the common symptoms that accompany prolonged pyrexia. The early Irish manuscripts, which first attempt any classification of the fevers, emphasize the prevalence and virulence of fever of the "putrid type." This type of fever is recorded under the Gallic name of "Fiabhrus Morgaighthe," a term that is now conceded to have related to the fever subsequently known as the fever of the typhus type, the true *typhus Hibernicus*, frequently mentioned as the "Plague of Ireland."

THE EARLY EPIDEMICS

Since the beginning of authentic medical records typhus fever has held first place as a devastating disease among the inhabitants of Ireland, an unenviable reputation which the country has held until recent years. It is very probable that the plagues which accompanied the earliest civil wars were principally epidemic typhus. In 1642, Dr. Gerard Boate, physician to Cromwell's army, states that,

"as Ireland is subject to most diseases in common with other countries, so there are some whereunto it is particularly obnoxious, being at all times so rife there that they may justly be reputed for Irelands 'endemii morbi,' or reigning diseases, as indeed they are generally reputed for such. Of this number is a certain sort of malignant feavers, vulgarly in Ireland called Irish agues, because at all times they are so common in Ireland, as well as among the inhabitants and natives, as among those who are newly come thither from other countries." Doctor Boate likewise notes its epidemic nature, prevailing "in some years with so great violence, that notwithstanding all good helps, some are thereby carried to their graves; and others who come off with their lives through robustness of nature or hidden causes, are forced to keep their beds a long time from extreme weakness, being a great while before they can recover their perfect health and strength." The "Irish agues," as described by Boate, were not fevers of an intermittent character, and all authorities now agree that such disorders should be regarded principally as the true typhus fever. For a long period subsequent to the time of Boate, typhus fever throughout the British Isles was known as the "Irish ague."

Accurate descriptions of the early epidemics of typhus fever in Ireland are somewhat meager and unreliable, especially in regard to numerical data, since separate statistics for the disease have not been required by law until within comparatively recent years. Doctor Short, in a report for the year 1682, states: "In 1682 there raged a spotted fever in Dublin; in that year died 2,262, a very high bill." Rogers records a severe epidemic in Cork during the year 1708. Both the summer and winter of that year were exceedingly cold and were accompanied by an almost complete failure of the crops. This epidemic was repeated during the period 1718–1731, and again in 1728–1731. Epidemics of the disease, recorded by Rutty and O'Connell, again occurred from 1740 to 1743 and spread generally throughout the country, producing a very high mortality. It was estimated by the above observers that one-fifth of the inhabitants died of the fever during the epidemic. Scarcity of food during 1740 caused large crowds of people to leave their homes and live a life of begging and vagabondage throughout the country, thus tending to spread the disease. Poor crops again occurred in the years 1797 and 1800, accompanied by an acute outbreak of typhus fever which quickly subsided following a good harvest in 1801. It was following this epidemic that the first fever hospitals were founded in Cork and Dublin in the year 1802. Although such hospitals at first were not popular with the people, they were never without patronage, since the marked increase in population and wide spread prevalence of poverty and fever throughout the country occasioned such an

excess of destitute patients that they were forced to make use of the institutions furnished by the government or else die by the roadside.

Influence of the Napoleonic wars.—With the economic depression which followed the Napoleonic wars in Europe, Ireland again experienced a period of distress and want. The severe winter of 1816 and failure of the potato crop precipitated a famine accompanied by an epidemic of fever which, according to Doctors Barker and Cheyne, attacked about one and one-half million people out of an estimated population of 6,000,000. Within the course of two years, more than 42,000 patients were admitted to the fever hospitals. It is reported that during this epidemic there were approximately 70,000 cases of typhus fever in the city of Dublin, or one-third of the inhabitants were afflicted with the disease. The economic depression and the lack of food in Ireland just subsequent to the Napoleonic wars are aptly described by Bridges in "Two Centuries of Irish History," Newsholme, "Poverty and Disease":

> Hordes of starving families were driven from their homesteads into the garrets and cellars of the nearest town; when hope of finding work was gone, and town after town had been visited in vain, they betook themselves to a life of aimless vagabondage, living on wild turnips and nettles when alms failed, and carrying death with them. The most potent causes, vagrancy, starvation, cold, and, above all, the moral lethargy and despondency resulting from enforced idleness, were for the statesman rather than for the physician to cure.

Increase in population and poverty.—Subsequent favorable years for harvests were marked by a considerable increase in the population, in spite of persistent and increasing economic depression and political troubles throughout the country. In four decades (1800–1840) Ireland's population more than doubled.[1] However, the poverty of the people seemed to increase directly with the population. Because of political strife the industries of the country retrograded, and agricultural pursuits finally were practically limited to the cultivation of the potato, which, at that time, was the principal article of food. With the marked increase in population and the decline in industries, the people became almost entirely dependent upon their own produce from the land for subsistence. The rapid growth of the potato and the small amount of land required for its cultivation made it possible for large numbers of people to exist on very small portions of land. In 1845 the population was calculated

[1] In 1672 the population of Ireland was estimated at 1,320,000; in 1788 it was 4,040,000; in 1845 it reached its highest peak, 8,295,000, after which year it began to decline, reaching 6,014,000 ten years later, in 1855, 5,023,000 in 1883, and 4,468,000 in 1900. The population practically remained at this figure between 1900 and 1919, in which year it is given as 4,462,000.

Extensive emigration followed the famine beginning in 1845, but the enumeration of emigrants from the Irish ports did not begin until 1851, in which year approximately 150,000 emigrants were recorded. In 1852 there were 190,000 recorded as leaving the country; in 1853, 170,000, and in 1854, 139,000. From 1855 to 1863 the emigration varied between 58,000 and 90,000; in 1863 it reached 110,000, and in 1864, 114,000, after which year it remained well below 100,000 until 1887, when it increased to 108,000, thereafter dropping to 40,000 in 1902, to 10,000 in 1916, and 2,900 in 1919. (See Fig. 1.)

at over 8,000,000 persons, and at least one-half of that number were dependent on the potato for subsistence. The extreme poverty that existed in some of the rural districts during that period is recorded by Stephen Gwynn in his book "Ireland," in which he states:

> The parish which in 1841 held over 9,000 souls, possessed, according to the inventory furnished by the schoolmaster in 1837 (and Lord George vouched for its accuracy), one cart, and no other wheeled vehicle, one plow, sixteen harrows and twenty shovels; no pigs, twenty-seven geese, three turkeys; no clock, three watches; no fruit trees, no vegetables but potatoes and cabbage; two feather beds, eight chaff beds; people slept on straw, green and dried rushes, and all of them "in the bare buff." Men and cattle were housed together, the cattle at one end of the kitchen. The school-teacher, a man of distinction, had a salary of 8 pounds per year. The peasantry in general lived on one meal a day and in 1837 could often eat only once in two days. In 1841 the population was 8,175,000, but during the same period, except in the area about Belfast, industries were declining. The poor became a teeming multitude with nothing to live on but the produce of the land; the rich had nothing to live on but the rents of the land. The diet of the poor consisted principally of potatoes and milk throughout almost the entire country except the north, where meal was used in addition. Over 2,000,000 persons, it was estimated, were in distress for 30 weeks of every year. At least a quarter of a million were habitually driven to beg on the roads for the period between the exhaustion of one potato crop and the harvest of the next.

The famine and epidemic of 1845–1850.—Under the prevailing conditions, then, it is little wonder that when a blight practically caused a total destruction of the potato crops from 1845 to 1850, there resulted a famine accompanied by an explosive outbreak of fever and a vast emigration which is probably without parallel in the history of Europe. The typhus epidemic that accompanied the potato famine was probably the worst that has ever visited the country. The Irish people themselves, called the fever "road fever," since it especially attacked wandering people. Along with the typhus there were relapsing fever, dysentery, scurvy, and purpura. The Cork Street Fever Hospital, in Dublin, is said to have taken in 12,000 cases in 11 months. The mortality is estimated as having been between 10 and 30 per cent. This severe famine and epidemic were followed by an emigration of the people such as the country had never before experienced.[1] There are a few meager reports of the fever having been left in the tracks of the emigration in England and, especially, in America, the principal land of destination. It is significant that, as soon as the emigrants reached a land where hunger and destitution

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[1] In 1672 the population of Ireland was estimated at 1,320,000; in 1788 it was 4,040,000; in 1845 it reached its highest peak, 8,295,000, after which year it began to decline, reaching 6,014,000 ten years later, in 1855, 5,023,000 in 1863, and 4,466,000 in 1900. The population practically remained at this figure between 1900 and 1919, in which year it is given as 4,462,000.

Extensive emigration followed the famine beginning in 1845, but the enumeration of emigrants from the Irish ports did not begin until 1851, in which year approximately 150,000 emigrants were recorded. In 1852 there were 190,000 recorded as leaving the country; in 1853, 170,000, and in 1854, 139,000. From 1855 to 1863 the emigration varied between 58,000 and 90,000; in 1863 it reached 110,000, and in 1864, 114,000, after which year it remained well below 100,000 until 1887, when it increased to 108,000, thereafter dropping to 40,000 in 1902, to 10,000 in 1916, and 2,900 in 1919. (See Fig. 1.)

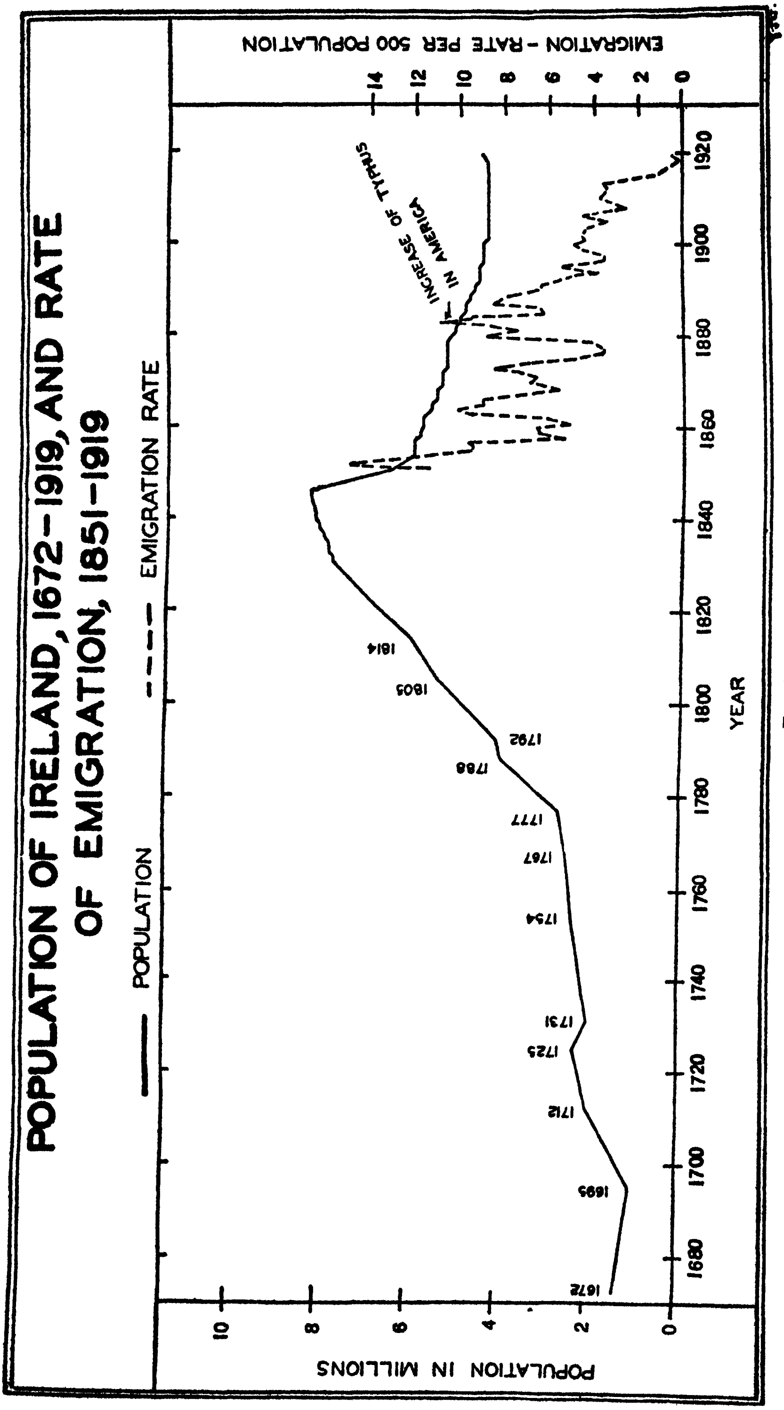
POPULATION OF IRELAND, 1672–1919, AND RATE OF EMIGRATION, 1851–1919
POPULATION
EMIGRATION RATE
POPULATION IN MILLIONS
EMIGRATION - RATE PER 500 POPULATION
YEAR
INCREASE OF TYPHUS IN AMERICA
0
2
4
6
8
10
12
14
1680
1700
1720
1740
1760
1780
1800
1820
1840
1860
1880
1900
1920
1672
1695
1712
1725
1731
1754
1767
1777
1788
1792
1805
1814

Fig. 1

did not exist, the disease failed to propagate in epidemic form, although they scattered in many directions and carried the disease with them. In this connection it is of interest to note that all of the great epidemics of typhus fever in Ireland have occurred during periods of famine and destitution, and that whereas the great epidemics of plague, cholera, and influenza have been imported from the East, and the progress of such epidemics can be followed from one country to another, no such spread of typhus epidemics can be traced.

FACTORS INFLUENCING THE SPREAD OF TYPHUS FEVER

Social influences.—The early medical records indicate that whereas typhus fever has usually been epidemic in other countries, it has been persistently endemic in Ireland, with tendencies, at intervals, during periods of want, to violent explosive outbreaks. There appears to be a few special causal factors relative to the continued prevalence of this disease which are peculiar to the Irish people. The native inhabitants of the country have always been a restless people; and especially during periods of strife and destitution they have had a tendency to migrate from one section of the country to another, and vagrancy and mendicancy have been prevalent. Furthermore, seasonal movements of laborers during haying and harvest times have always been excessive. The Irish have always been known as an exceedingly hospitable and generous people—characteristics which, though lovable and commendable, prove to be disastrous when vagrancy and hunger are prevalent and typhus fever exists throughout the land. The habitual hospitality of the Irish, too, has interfered with the work of institutions established for the purpose of controlling epidemic diseases. The fever hospitals and workhouses, when first founded in Ireland, were not popular with the people. The inherent generosity of many natives would tend to cause them to accept a wandering friend afflicted with fever into their own households, even though overcrowded, rather than see him sent to an institution. The tendency of large families to live in overcrowded quarters, the sociable nature of the poeple, causing them to exchange frequent and prolonged visits with each other, and the custom of observing wakes were factors bearing on the spread of the disease.

The food factor.—The potato, the principal article of food for the Irish for so many years, frequently proved to be untrustworthy, as shown by the occurrence of famines during the numerous failures of the potato crops. The potato, introduced into Ireland in 1610, soon became the principal article of food among the people. It probably has played as tragic a part in the famines, epidemics, and darker sides of Irish history as the numerous political upheavals to which the country has been subjected. Newsholme, commenting upon the

importance of the potato as a causal factor in the production of poverty and disease in Ireland, states:

> The history of typhus in Ireland is closely wrapped up with that of the potato. Even in the early part of the reign of Charles II this demoralizing esculent, according to Petty, was already the national food. It was thus described because the life of large families could be supported by means of the potato with little labour so that the subsistence of the population was thus placed at the mercy of a single crop. The rate of wages was kept down by the same conditions, and Malthus speculates with much force on how different would the history of Ireland have been had the staple food been oatmeal or wheat.

DECLINE IN THE INCIDENCE OF TYPHUS FEVER

Since the great epidemic and famine of 1845–1850 there has been a gradual improvement in the economic prosperity and well-being of the people, with a coincident decline in the prevalence of typhus fever. The only serious outbreak of the disease within comparatively recent years which is in any way comparable to the early epidemics, is the epidemic which occurred in 1880. At that time there was a widespread tendency of landholders to evict their tenants in order to clear their estates. The year 1880 was noted for excessive rainfall and cold, which resulted in decreased crop production. During the years 1879 and 1880 there were 3,348 families evicted in Ireland, resulting in a widespread restless, wandering, and ill-nourished population, moving from town to town in an unsuccessful search for work or a new place in which to settle. The physical fitness of the population, too, had been reduced by a severe epidemic of smallpox which had just spread over the land. The result, as might be expected, was a marked increase of typhus fever throughout the country. This increase is to be seen in the sharp rise of the typhus fever curve for that year. The effects of the eviction of families on Irish emigration is also seen in the rise of the emigration curve for the period 1880–1883. As on previous occasions, there resulted a certain amount of typhus fever in England and America [1] in the wake of the immigration, but the disease failed to spread in epidemic form to any great extent.

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[1] Probably the most favorable period that ever existed in the United States for an extensive typhus epidemic was during the Civil War. It is quite probable that typhus fever did prevail much more extensively during that period than the records indicate. There are no data available relating to losses sustained by the Southern States. Prinzing notes the following figures from the health reports of the Northern States relative to the prevalence of typhus during the course of the Civil War:

Number that contracted typhus fever: White troops, 2,501; colored troops, 123. Number that succumbed to it: White troops, 850; colored troops, 108.

Reports indicate that typhus fever prevailed among the northern prisoners in the neglected prisons of Salisbury, N. C., and elsewhere. The total number of deaths in the Northern Army from the common fevers, typho-malarial fevers, typhus fevers, and typhoid fevers, combined, during the entire course of the war was 32,112 white troops and 3,689 colored troops. During this period there was an increased incidence of typhus fever among the civil population. According to Corse (Prinzing: Epidemics Resulting from Wars), the number of deaths due to typhus fever in Philadelphia was 37 in the year 1862, 131 in 1863, and 335 in 1864. Although most of the above fevers of a doubtful nature among the northern troops have been considered as typhoid by most authorities, it seems probable, in view of our present knowledge of typhus, that a large percentage of them were really cases of typhus fever.

TABLE 1.—*Death rates per 100,000 population for typhus fever, 1869-1921, and simple fever, 1869–1910 in Ireland*

[Figures taken from annual report of registrar general of births, deaths, and marriages in Ireland]

Year	Rate per 100,000 population		Year	Rate per 100,000 population	
	Typhus fever	Simple fever		Typhus fever	Simple fever
1869	16.3	31.5	1896	2.7	2.9
1870	13.5	26.6	1897	2.6	1.7
1871	16.1	25.4	1898	4.9	2.2
1872	11.2	28.3	1899	2.5	1.6
1873	12.9	28.1	1900	2.8	1.7
1874	14.0	27.0	1901	2.0	1.9
1875	13.1	25.1	1902	1.8	1.1
1876	11.7	22.4	1903	1.7	1.0
1877	13.6	20.5	1904	1.2	1.0
1878	14.1	23.0	1905	1.5	.9
1879	14.3	20.3	1906	1.9	.6
1880	17.9	16.8	1907	1.2	.5
1881	16.6	15.0	1908	1.3	.4
1882	14.5	12.8	1909	.9	.5
1883	16.1	11.7	1910	1.4	.3
1884	12.6	11.4	1911	.8	
1885	10.2	8.9	1912	.7	
1886	8.0	7.7	1913	1.0	
1887	8.3	7.9	1914	.6	
1888	7.5	6.8	1915	.6	
1889	7.5	5.2	1916	.6	
1890	8.2	4.9	1917	.8	
1891	5.6	3.9	1918	.6	
1892	5.7	4.5	1919	.5	
1893	4.9	3.0	1920	.9	
1894	5.0	3.2	1921	.5	
1895	4.2	2.6			

Effects of emigration.—Although the constant stream of emigration from Ireland which followed the famine of 1845–1850 has been described as a "national hemorrhage" which has remained unchecked, leaving the country in a weak and anemic condition, nevertheless it is certain that such a prolonged exodus of the people has not been without its advantages to the health of the country. Emigration has relieved the overcrowding and has caused a decrease in the restlessness and in vagrancy which were so prevalent and played such an important part in the spread of communicable diseases previously.

Changes in food and houses.—Since the great famine the Irish people have learned not to depend so much upon the potato as a staple article of food, but have cultivated other vegetables and cereals more extensively. It is significant that coincident with the decrease in population due to emigration there has been an increase in the variety and quantity of food products. The increase and improvement of animal industry and dairy products have been marked, and these industries have become valuable assets to the country, not only for the revenue from export, but also from the standpoint of food value for the nation. The improvement in the standard of living among the Irish is also shown by the improvement in the houses occupied by the majority of the population. The following figures (taken from Newsholme, "Poverty and Disease") illustrate the change in the housing situation throughout the country.

Percentage of different classes of houses in Ireland

	1841	1861	1901
First class	3.0	9.7	11.2
Second class	19.9	46.9	59.3
Third class	40.1	39.2	28.4
Fouth class	37.0	4 2	1.1

The fourth class of houses comprises chiefly houses of mud or of other primitive building materials, having only one room and one window; houses of the third class, somewhat better, have 2 to 4 rooms and as many windows; houses of the second class are equivalent to

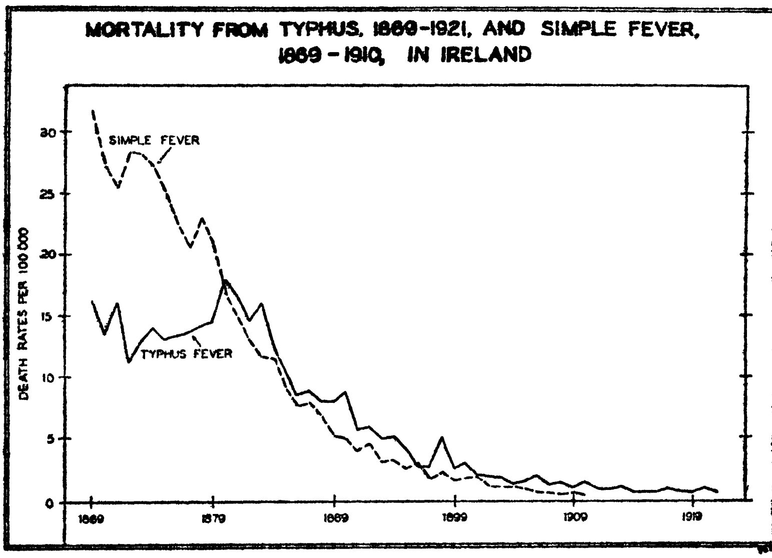

FIG. 2

what would be considered a good farmhouse, having 5 to 9 rooms and as many windows; and houses of the first class include all better houses than those in the second class.

Decrease in illiteracy.—Probably one of the most important factors indicating an improvement in the people as a whole, and, indirectly, in their standard of living and health, is the decrease in illiteracy throughout the whole of Ireland. The percentage of the people 5 years old and over who were classified as illiterate in certain of the census reports is as follows:

Year:	Per cent
1841	52.7
1871	33.4
1911	9.2

It is noteworthy that typhus fever is especially likely to prevail in countries where illiteracy is high. During the year 1911 the illiteracy

of the population over 10 years of age in Russia was 69 per cent, Serbia 78 per cent, Rumania 60.6 per cent, and Bulgaria 65.5 per cent, in all of which countries typhus fever prevailed extensively during and subsequent to the World War.

EPIDEMIOLOGICAL CHARACTERISTICS

Previous to the year 1869 the statistics relative to typhus fever recorded in the census reports and the annual reports of the Registrar General of Births, Deaths, and Marriages in Ireland were inconclusive, since previous to that year the Government included four forms of disease collectively under the term "fever," namely, typhus, enteric, relapsing, and continued fever. However, since 1869 these diseases have been considered separately and classified under their respective heads in the annual reports, thus affording valuable data concerning the death rates from typhus fever in Ireland since that year. The annual reports of the Cork Street Fever Hospital, 1809–1921, furnish valuable information relative to the number of typhus fever cases admitted to the hospital, and the age, sex, and number of deaths of such persons. During the past 30 years reports of the medical inspectors of the various medical districts throughout Ireland have been incorporated in the annual reports of the Local Government Board. The reports of the medical inspectors cover investigations of outbreaks of the diseases which offer unusual problems relative to diagnosis, origin, and transmission. Such reports relating to typhus fever are especially valuable in an epidemiological study of the disease, since they represent special investigations carried out by physicians especially trained and qualified to carry out such work. Some of the most important of these reports concerning outbreaks of typhus fever in Ireland during the past 25 years have been collected and are submitted herewith.[1]

Protean manifestations.—Although careful investigations were not carried out during the periods when typhus fever was most prevalent throughout Ireland, it seems quite probable, on analysis of the early reports, that the disease prevailed then in an atypical form, even as it does at the present time. A large majority of the so-called Irish agues were probably atypical cases of typhus fever. The vast number of the ill-defined, continued, and simple fevers and febricula which were reported during earlier periods outnumbered the typhoid and typhus fever cases combined. For example, during the two years 1869 and 1870, there were admitted to the Cork Street Fever Hospital, in Dublin, 675 cases of typhus fever, 250 cases of enteric fever, and 1,164 cases of febricula. The coincidence of an increased incidence of febricula or simple fever with

[1] Owing to the lack of space it is not possible to print here the detailed reports of the district medical inspectors.—ED.

periods of maximum prevalence of typhus fever, in the light of our present knowledge regarding the protean clinical characteristics which the latter disease may assume, justifies the conclusion that a very large percentage of the cases recorded as simple fever were really atypical cases of typhus fever. The death rate from simple fever in Ireland since 1869 is shown in graphic form with the typhus fever curve.

An analysis of the reports of the medical inspectors relative to small outbreaks of typhus fever in Ireland during the past 25 years shows that almost all the outbreaks began with, and were accompanied throughout their course by, cases of the disease which were atypical in character and which would not have been suspected of being typhus fever except for the communicable nature of the illness and the occurrence of a certain percentage of other cases with typical symptoms of the disease. It has been conclusively shown in these reports and in other available records that cases of typhus fever have frequently been ascribed to such diseases as influenza, typhoid fever, and pneumonia. It has also been shown that typhus fever has occasionally been mistaken for ill-defined and continued fevers, puerperal fever, obscure and unrecognized disorders among children, and in deaths among old people ascribed to chronic complaints, such errors in diagnosis being brought to light by subsequent cases of illness occurring in the same families, or among those exposed to the sick persons, which proved to be typical cases of typhus fever.

The clinical symptoms associated with typhus fever in Ireland have been variable. In many cases the predominating symptoms have been respiratory in character. Bronchial catarrh has been so marked during epidemics in the past that the disease has occasionally been described as "catarrhal typhus," from the common presence of bronchial catarrh as a complication. On the other hand, many cases have been noted for the presence of prolonged fever and a stuporous mental state. Occasionally abdominal complaints have been mentioned as predominating symptoms.

Because of these variable symptoms it appears that typhus fever is capable of assuming protean characteristics, clinically, even as frequently as is influenza.

Distribution throughout Ireland.—The distribution of typhus-fever cases throughout Ireland changed with the standard of living. When the disease was extensively prevalent, the greatest number of cases occurred in the cities. Mapother, in 1866, in describing the unhealthiness of Irish towns and the lack of sanitary legislation, stated that fever had been much more severe in the cities as compared with the rural districts: "In the city of Sligo (population 10,605) 1 in 43 yearly suffered from fever, on an average of 7 years. In Ennis (population 7,041) no less than 1 in 24 of the population of

the dispensary district yearly suffer from fever. In Athlone (population 5,902) the death rate for the population of all towns over 2,000 inhabitants was nearly twice as high as that of the rural populations." Within recent years the situation has been reversed. Records for the past 20 years indicate that at least two-thirds of the typhus-fever cases have been reported from the rural districts, especially from western Ireland, while the remaining one-third have been reported from the urban districts. During 1920 one-third of the typhus-fever cases were reported from the western inspection districts; one-third was equally divided between the county boroughs of Dublin, Cork, and Londonderry, and the remainder represents the occurrence of the disease throughout the remainder of the country. The records of 1923 to 1925 show that only one report came from the urban districts, while 108 cases were reported from the rural districts.

Since the majority of Irish immigrants to America come from the country districts, especially from western Ireland, a knowledge of the geographical distribution of typhus fever is of value to the medical officer concerned with the examination of prospective immigrants preparatory to securing a visa.

Season.—It has generally been accepted that typhus fever is a disease of the winter months. Sir William Moore, of Dublin, found, from an examination of the Returns of the Registrar General of deaths from typhus in Ireland, that the death rate attains its maximum in January and its minimum in September. He further states that the number of admissions of typhus-fever patients to the London Fever Hospital over a period of 23 years reached a maximum during January and March, the minimum falling in July, August, and September. An analysis, by the writer, of the admissions of typhus-fever patients to the Cork Street Fever Hospital, in Dublin, for the period 1876 to 1921, shows that the maximum was reached in the month of December and the minimum in July. However, variations in the numbers admitted for the various months were not great, as the accompanying graph clearly indicates. It is well known that epidemics of typhus fever prevail irrespective of the season of the year and that sporadic cases frequently occur during the summer months.

Table 2.—*Cases of typhus fever admitted to Cork Street Fever Hospital, Dublin, 1876–1921*

[Figures taken from annual reports of Cork Street Fever Hospital]

Year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Total
1876	2	6	11	9	6	4	6	13	8	13	9	13	100
1877	13	13	13	10	11	16	9	10	16	7	5	11	134
1878	11	7	14	15	14	17	11	15	13	9	9	7	142
1879	2	5	2	4	4	5	4	5	6	18	20	19	94
1880	11	18	11	12	14	18	39	83	95	50	33	36	420
1881	26	32	18	16	22	26	22	4	4	13	4	11	198
1882	13	7	5	5	12	8	5	15	43	35	70	67	285
1883	53	54	28	23	28	19	13	42	22	20	27	21	350
1884	20	8	11	18	7	10	25	12	18	11	8	1	149
1885	1	3	5	5	5	10	4	3	7	2	7	14	66
1886	5	3	3	7	13			9	5	13		3	61
1887	2	4	1	1	12	6	3	7	9	5	9	24	83
1888	9	9	8	7	8	3	2	2		7	1	3	59
1889	2	4	1	6	5	7	2	5	15	4	7	2	60
1890		2	2	1		5	13	12	15	5	2	1	58
1891	3		1		1	2	2	2	6	2		1	20
1892	1	3	2		2				1	2	3	4	18
1893	2	1		1				1	1		1		7
1894	3	1			2	1	2	2	1	1	1	1	15
1895	5	3				1	1						10
1896	1	1	1		1	1		4	14	16	15	16	70
1897	4	1		1		2							8
1898		1				4		8	1	4		1	19
1899		3	13	2	2	3						2	25
1900		1	2	4		5	6		3	3	1		25
1901			1	4	6	4	3		1	3			22
1902					1				3	1			5
1903													
1904		1					3	1	1			2	8
1905	1						2	2	1		1	1	8
1906	1		2	3	1	2	1			4	1	14	29
1907	4	1	2	3	2	6	1			2	1		22
1908					1		2	1		1	4		9
1909			1				2	1	4			2	10
1910	3		2	1					3			1	10
1911	1	4	4	1	2	1	8	2	5		3	1	32
1912				1	1	4		1		8	1	11	27
1913								2	1	1		1	5
1914			1				2	10	13	8	6	5	45
1915		3	4	2			2	2				1	14
1916			3				3	5			1	1	13
1917	1			1								4	6
1918	1												1
1919		1	4	2	4				1				12
1920	5	8					10	15	3	9	2	1	53
1921	3	1											4
Total	209	208	177	165	187	190	208	296	339	277	252	303	2,811
Per cent of total	7.43	7.39	6.29	5.87	6.65	6.75	7.39	10.53	12.05	9.88	8.96	10.77	100.00

Table 3.—*Cases of simple fever admitted to Cork Street Fever Hospital, Dublin, 1876–1897*

[Figures taken from annual reports of Cork Street Fever Hospital]

Year	Apr.	May	June	July	Aug	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Total
1876	20	18	13	15	25	17	12	17	17	16	18	12	200
1877	18	24	18	17	9	7	14	18	31	23	29	12	220
1878	13	16	18	19	13	13	20	6	14	21	11	9	173
1879	12	4	4	7	11	8	8	3	7	16	16	8	104
1880	12	16	12	6	7	5	8	15	7	7	6	2	103
1881	5	5	8	8	5	7	3	2	4	2	4	2	50
1882	9	8	3	4				2	5	9	8	16	64
1883	5	9	4	3	12	6	9	10	9	6	6	4	83
1884	9	3	5	6	6	2	5	3	6	3	5	1	54
1885		6	4	1	3	2	1	4	4		1	2	28
1886	4	2	2	1	2	2	4	3		4	3	5	32
1887	3	3	4	1	2	4	3	3	1	1	1	2	28
1888	1	1	8	2	5		1		3	1	4	3	29
1889	2	1	2	4	3	2	3	4	5	4		1	31
1890	1	1	2	2	2	1		2		2			13
1891	4	3	3	2		2	5	5		1	1	3	29
1892		4	2	1	2	4	4	11	1	4	4	6	43
1893		1	1		6	4	3	1	9	3			28
1894	2	2	1	2	1		1	2		3	1	1	16
1895		2	1	1		1	1	1				3	10
1896	2	3	1	4	1	1	2		1	1	7	2	25
1897	1	2	1	1	6	1	3	2	1	1	6		25
Total	123	134	107	107	121	89	110	114	125	128	131	99	1,388
Per cent of total	8.86	9.65	7.70	7.70	8.71	6.48	7.92	8.21	9.00	9.21	9.43	7.13	100.00

It appears that the virus does thrive during the warmer months as vigorously as during the winter time and that the increased incidence of the disease during the colder seasons is probably due to more favorable conditions for its transmission. During the winter the poor are more likely to suffer from a shortage of food, overcrowding, and exposure; clothing is not changed as frequently as during the summer, which, together with overcrowding, promotes lousiness. Famines always cause the greatest distress during the winter months. The frequent occurrence of catarrhal symptoms and affections of the respiratory organs as complications of typhus suggests

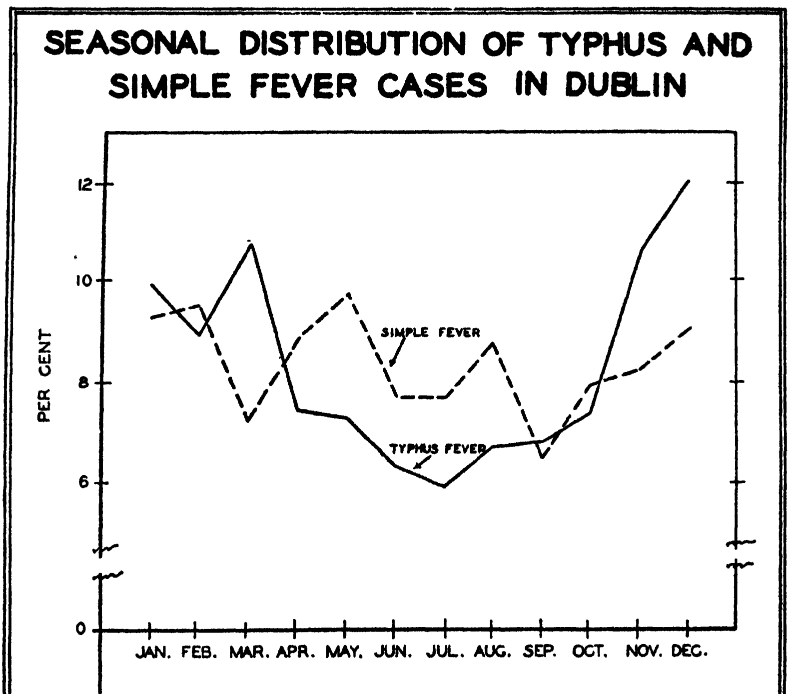

FIG. 3

that, from the nature of such symptoms, more cases might be expected during the colder seasons of the year. There are insufficient data available pertaining to the atypical and mild cases of typhus fever in Ireland to indicate conclusively the seasonal prevalence of this particular form of the disease. Maxcy (Public Health Reports, December 24, 1926) has recently shown that mild endemic typhus in the southeastern United States reaches its maximum incidence in the summer and fall, in contrast with the increased winter incidence of typhus in European countries.

Sex.—It has frequently been reported that men die of typhus in greater numbers than women. This has been attributed to various

factors, such as the greater muscular development of men, intemperance among the male sex, and to the fact that men are more frequently subjected to overwork and fatigue. According to Sir John Moore, records of 740 cases observed in epidemics in Breslau, by Lebert, indicate that 55.68 per cent of the patients were males, and only 44.32 per cent were females. Out of 18,268 cases of typhus admitted to the London Fever Hospital during the 23 years, 1848–1870, inclusive, 8,946 were males and 9,322 were females. The excess of females was 376; but this ratio is accounted for by the preponderance of females in the total population. Doctor Moore infers from this that sex does not in itself predispose to typhus fever. An analysis by the writer of 1,995 cases admitted to the Cork Street Hospital, in Dublin, for the period 1875–1894, shows that there were 1,049 females and 946 males, making 103 more females than males. This observation is in agreement with the conclusion of Sir John Moore that sex does not play a predisposing part in acquiring the disease.

Age. – Practically all reports on typhus fever indicate that it is, for the most part, a disease of adult life. Sir John Moore reports that in the London Fever Hospital it was ascertained that of 3,456 cases of typhus fever admitted to the hospital, the mean age was 29.33 years. An analysis, by the writer, of 1,995 cases admitted to the Cork Street Fever Hospital, in Dublin, for the period 1875–1895, shows that 36.49 per cent of the cases were between the age of 20 and 40 years. These figures also indicate that the incidence and the mortality of the disease are low among children, in comparison with adults, and that the mortality among the aged is very high. These observations are in accord with other reports regarding the influence of age on the prevalence of typhus. The accompanying graph represents the incidence of the disease according to certain age groups, and the death rates for the same age periods.

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TABLE 4.—*Summary of cases of typhus fever admitted to the Cork Street Fever Hospital, 1875–1894, giving the number of cases, the case-fatality rates, and the percentage of admissions, by sex and age groups*

[Figures taken from the annual reports of the Cork Street Fever Hospital]

	Admissions		Mortality	
	Number	Per cent	Number of deaths	Per cent of deaths
Males:				
Under 5 years	55	5.8	3	5.5
5 and under 15	286	30.2	7	2.4
15 and under 20	180	19.0	12	6.7
20 and under 40	328	34.5	65	19.9
40 and under 60	88	9.3	23	26.1
60 and under 80	11	1.2	7	63.1
Total	946	100.0	117	12.4
Females:				
Under 5 years	53	5.1	0	0
5 and under 15	269	25.6	11	4.1
15 and under 20	200	19.1	13	6.5
20 and under 40	401	38.2	58	14.5
40 and under 60	114	10.9	33	28.9
60 and under 80	12	1.2	8	66.7
Total	1,049	100.0	123	11.7
Both sexes				
Under 5 years	108	5.4	3	2.8
5 and under 15	555	27.8	18	3.2
15 and under 20	380	19.0	25	6.6
20 and under 40	727	36.5	123	16.9
40 and under 60	202	10.1	56	27.7
60 and under 80	23	1.2	15	65.2
Total	1,995	100.0	240	12.0

Social status.—Probably the most potent predisposing causative factor of typhus fever is undernourishment. Almost all the smaller outbreaks in Ireland within recent years have occurred among families in straitened circumstances, victims of deficient nourishment, overcrowding, and poverty. Occupation seems not to have been a predisposing factor except in so far as it tended to lower bodily resistance through fatigue from overwork or actual exposure to the disease. The poor peasant classes in the country districts, accustomed to heavy physical labor on insufficient food, seem to be especially prone to the disease. It has been noted during typhus epidemics that butchers seemed to be especially immune from typhus fever (Sir John Moore: Text Book of Eruptive and Continued Fevers), although apparently exposed to the infection as frequently as other people. The reason for this has been attributed to the fact that they always have an ample supply of nourishing food. Doctors and nurses, when exposed, are especially likely to succumb to an attack when fatigued or undernourished. Von Hildenbrand, of Vienna, who, in 1815, differentiated the typhus exanthematus from the typhus abdominalis of the Germans, noted the importance of being physically fit when attending typhus-fever patients. He recommended that one should never approach a case with an empty

stomach, or when the body is wet and cold. He advised taking some wine or brandy or some small meal or to make the body less receptive to infection by moderate warmth. It is reported that Doctor Ricketts, who lost his life from an attack of typhus fever acquired in Mexico, was fatigued and in poor physical condition from overwork just previous to his last trip to Mexico City. Other

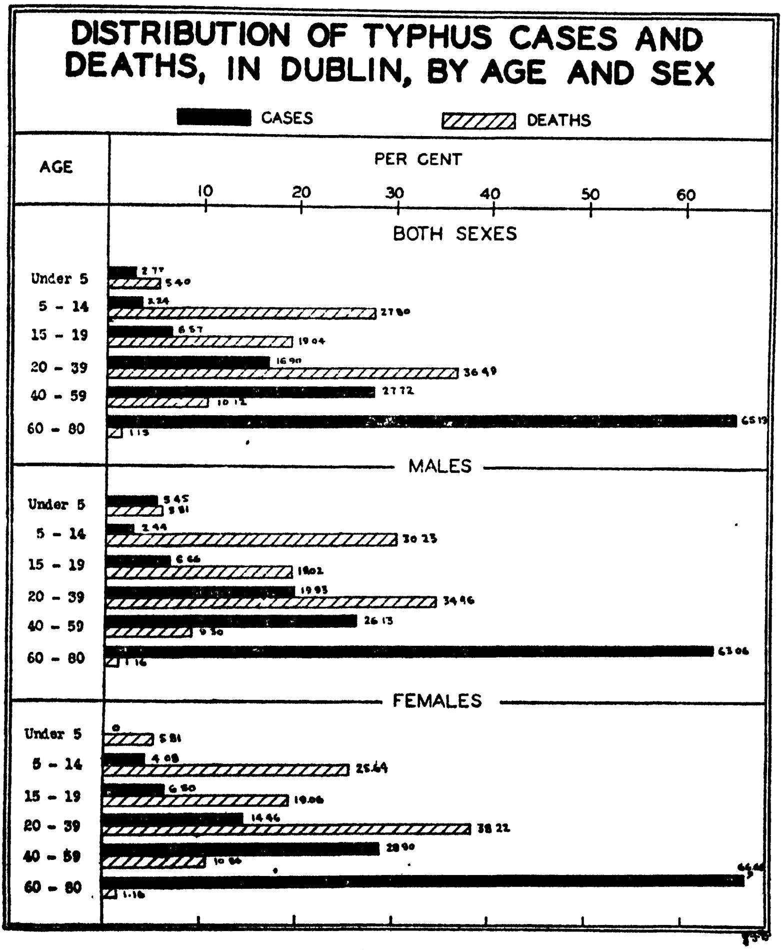

FIG. 4

predisposing factors which lower the natural resistance, acting in a manner similar to that in which undernourishment operates, are intemperance and the loss of strength from previous illnesses. Murchinson has pointed out that he has known of persons exposed to typhus fever for months and apparently immune who were attacked immediately after an alcoholic debauch. Patients convalescing from other diseases are very susceptible to typhus. Epidemics of smallpox and other diseases in Ireland have been followed by an increased incidence of typhus.

DISCUSSION

Although there has been a marked decrease in the prevalence of typhus fever in Ireland coincident with the improvement in the standard of living of the people, nevertheless, the disease still remains in endemic form with frequent small outbreaks throughout the country. The occurrence of occasional isolated cases during earlier periods was explained at the time by the theory of the spontaneous origin of disease, such cases being thought to arise *de novo*. It is now known that the disease is caused by a specific virus which thrives or tends to die out according to whether the environment is suitable or detrimental to its growth, and that each case of typhus owes its origin to some previous case of the same disease, regardless of the duration of the intervening period which separates cases. However, just what factor is responsible for the maintenance of the virus during prolonged periods between cases has not been conclusively established. Dr. Charles V. Chapin, in his lecture, "Changes in type of Contagious Diseases," submits facts which support the theory that the mild type of present-day scarlet fever is due to the elimination of the severe strains of the disease through selective isolation, and that the mild type of smallpox of to-day is due to certain changes or mutations in the virus. The compulsory isolation of all recognized cases of typhus within recent years may be a factor in eliminating virulent strains of the disease, even as with scarlet fever; but it seems more probable, in view of the nature of typhus, that the present mildness and atypical characteristics of the disease are due to the present unsuitable state of the medium by which the virus is spread. It has been shown that typhus will not flourish in a well-nourished population. On the other hand, given a population which has suffered from insufficient food, the disease seems to revive in its original virulent form, as demonstrated in European countries during the World War.

During the period 1920 to 1922 there were serious political upheavals in Ireland, accompanied by war, restlessness, and anxiety among the people. This period of political stress, however, was not accompanied by want, since there was an abundance of food throughout the land. Apparently the only predisposing factor that was missing during this period was undernourishment of the people. There were overcrowding and poor sanitation in some quarters, with endemic typhus through the land. Lousiness must have been prevalent, since examinations of prospective Irish immigrants to America indicate that at least 50 per cent of such people present evidence of infestation. The fact that no serious outbreak of the disease occurred during the above period indicates the importance

of nutrition as a causal factor in the incidence of typhus. As already mentioned, it is certain that the disease in virulent form has been transferred to other countries where, perhaps, the environment has not been favorable for its extension. The tendency has been for the disease to die out or to assume an atypical form. In this respect the parallel between the infection of tuberculosis and the parable of the sower, as given by Osler, is applicable to the infection of typhus; i. e., the resultant disease is dependent on the nature of the soil upon which the seeds fall, either dying out entirely or changing in virulence and type, even as a plant fails to grow and thrive true to form in an environment unfavorable for its growth.

It is impossible, from available records, to ascertain the origin of the great majority of the sporadic cases of typhus which have occurred intermittently throughout Ireland during the past 25 years. Many of them were reported from isolated districts where no cases of the disease had been recognized for long periods of time previously, and where there was an absence of subsequent cases, although, undoubtedly, contacts were numerous.

On the other hand, it has occasionally been possible to trace the origin of a sporadic case back to a case occurring several months previously, several atypical cases supplying the intervening links. (This is shown in one of the reports of the district medical inspectors.) It is noteworthy that many of the reports mention the mildness of the disease among children who frequently were not ill enough to go to bed and among whom the disease was difficult to recognize. For this reason it is probable that the disease has always been much more prevalent among children than statistics indicate.

The frequent occurrence of outbreaks of typhus fever following "wakes" is in accord with the well-established fact that the louse is the usual means of transmission of the disease. Lice are prone to leave a cold dead body and seek a new host. Apparently it is possible for an exposed person to transmit typhus fever to a third party without the intermediate party acquiring the disease. (Reports of the medical inspectors.) It also seems probable that furniture moved from an infected house may be the means of conveying the disease to other houses. (Reports of the medical inspectors.) There is evidence indicating that the use of secondhand clothing purchased from itinerant dealers has been the origin of certain cases of typhus fever. The exact manner in which old clothing may convey the disease is not clear in all cases. Since the life of the louse rarely exceeds 45 days, and it is doubtful whether the disease is ever handed down through succeeding generations of lice, it becomes difficult to explain, on this basis, the occurrence of certain cases in which a considerable period of time has elapsed between the purchase of the clothes and the development of the first case of the fever.

It seems safe to predict that, should the standard of living continue to improve in Ireland, there will be no further visitations of the great typhus fever epidemics. However, the manner in which the disease may return during periods of misery and want has been illustrated in recent years by the extensive epidemics in certain countries of war-swept Europe. The small localized outbreaks of the disease which continue to occur in Ireland among families and communities in destitute circumstances indicate that, under favorable conditions, the disease is capable of reviving in epidemic form. In this respect the occurrence of typhus fever epidemics differs from the periodical or cyclical visitations of certain other diseases, such as the great pandemics of influenza.

Although an analysis of the available data relative to the sporadic cases indicates that such cases usually were widely separated both as to time and distance, and with no relationship to each other or to outbreaks of the disease, still, others were associated with disorders of an obscure nature or with diseases which were afterwards shown to be atypical cases of typhus fever, furnishing the intervening links between the typical cases. It is highly probable that the unrecognized cases greatly outnumber the recognized cases. In view of the mildness of the disease among children, and the difficulty of recognizing the atypical cases, both among children and adults, it seems justificable to assume that it is largely through such cases that the infection is kept alive.

SUMMARY AND CONCLUSIONS

The great typhus fever epidemics which have occurred in Ireland during the past have prevailed during periods of famine.

The incidence of the disease has declined with the improvement in the standard of living.

Undernourishment has been the most potent predisposing factor in acquiring the disease.

Because of the unrecognized cases, typhus fever has always been more prevalent in Ireland than the records indicate.

Typhus fever in Ireland presents as varied characteristics, clinically, as influenza.

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DEATH RATES IN A GROUP OF INSURED PERSONS

Rates for Principal Causes of Death for August, 1927

The accompanying table is taken from the Statistical Bulletin for September, 1927, published by the Metropolitan Life Insurance Co., and presents the mortality experience of the industrial insurance department of the company for August, 1927, as compared with that for July and with that for August, 1926. The rates are based on a strength of approximately 18,000,000 insured persons in the United States and Canada.

The death rate for August for this group of persons was 8.1 per 1,000, as compared with 8 for the same month last year, this being the first month this year in which the death rate in this group exceeded that for the corresponding month of 1926. No significance is attached to this fact, however, as the difference is small and both rates are low.

Diphtheria is the only one of the four principal epidemic diseases of childhood to record an increase as compared with last year. The death rate for this disease has been higher every month this year than last year, though the 1927 year-to-date rate is low as compared with all preceding years excepting 1926.

While the typhoid fever death rate for August exceeded the rate for the same month last year, largely due to the Montreal outbreak, the rate for the United States shows improvement over last year as well as over all other years.

There were no notable changes, as compared with August, 1926, in any of the diseases of major numerical importance, with the

single exception of organic diseases of the heart, the death rate for which increased from 101.1 per 100,000 last year to 114.5 this year.

The death rate for diarrheal complaints was the lowest recorded since the industrial department began insuring infant lives.

The rate for automobile fatalities was higher than the rate recorded for August last year, but was the same as that for July, 1927.

Death rates (annual basis) for principal causes per 100,000 lives exposed, August, 1927, as compared with July, 1927, and with August, 1926

[Industrial department, Metropolitan Life Insurance Co.]

Cause of death	Death rate per 100,000 lives exposed [1]			
	August, 1927	July, 1927	August, 1926	Year 1926
Total, all causes	806.8	780.0	797.7	945.6
Typhoid fever	5.6	5.1	4.9	4.2
Measles	1.7	2.7	3.2	10.2
Scarlet fever	1.8	2.1	2.0	3.4
Whooping cough	7.0	6.1	8.0	9.6
Diphtheria	7.5	7.8	5.8	9.7
Influenza	4.5	6.2	5.0	31.1
Tuberculosis (all forms)	90.6	90.5	90.3	99.0
Tuberculosis of respiratory system	79.3	78.8	76.5	86.7
Cancer	74.3	65.6	73.4	73.7
Diabetes mellitus	15.1	13.7	13.2	16.7
Cerebral hemorrhage	44.6	46.8	45.9	55.6
Organic diseases of heart	114.6	111.5	101.1	131.3
Pneumonia (all forms)	38.2	43.4	36.5	98.2
Other respiratory diseases	11.2	12.1	10.4	13.0
Diarrhea and enteritis	35.9	24.5	50.4	29.8
Bright's disease (chronic nephritis)	61.0	60.3	59.2	73.5
Puerperal state	14.6	13.4	13.4	15.3
Suicides	8.7	7.9	6.8	7.7
Homicides	6.9	6.7	6.3	7.0
Other external causes (excluding suicides and homicides)	73.1	76.8	71.6	62.3
Traumatism by automobiles	19.7	19.7	15.9	16.8
All other causes	189.6	177.0	190.1	191.0

[1] All figures include infants insured under 1 year of age.

CASES OF POLIOMYELITIS REPORTED BY STATES FOR FIRST TWO WEEKS OF OCTOBER, 1925, 1926, AND 1927

The following table is a continuation of the table appearing in the Public Health Reports, October 7, 1927, page 2452, and also gives a comparison of the telegraphic reports for the first two weeks of October of the years 1925, 1926, and 1927:

Cases of poliomyelitis reported by State health officers October 2–15, 1927, compared with reports for the corresponding weeks of 1925 and 1926

State	Week ended—					
	Oct 8, 1927	Oct. 9, 1926	Oct 10, 1925	Oct. 15, 1927	Oct. 16, 1926	Oct. 17, 1925
Alabama	0	0	2	0	3	1
Arizona	5	0	0	6	0	1
Arkansas	1	1	0	13	2	1
California	36	3	17	26	3	10
Colorado	4	0	1	11	1	2
Connecticut	13	1	1	8	2	0
Delaware	0	2	0	0	0	0
District of Columbia	1	0	3	-----	0	1
Florida	1	0	3	0	0	4
Georgia	10	0	0	0	0	1
Idaho	1	0	-----	0	0	-----
Illinois	40	7	12	26	6	16
Indiana	9	3	1	13	3	7
Iowa	12	0	19	5	0	13
Kansas	15	4	5	26	5	5
Louisiana	0	0	1	1	0	0
Maine	13	-----	1	12	0	0
Maryland	1	2	4	2	1	2
Massachusetts	115	6	12	78	3	5
Michigan	30	0	0	21	0	0
Minnesota	12	3	45	5	2	23
Mississippi	2	0	0	0	0	0
Missouri	18	2	6	20	1	5
Montana	2	3	0	2	0	2
Nebraska	10	0	6	13	0	11
New Jersey	11	1	3	9	1	3
New Mexico	13	0	1	15	0	0
New York	59	37	40	38	20	32
North Carolina	1	6	4	0	5	1
North Dakota	-----	2	12	-----	0	3
Ohio	76	-----	-----	77	-----	-----
Oklahoma	10	1	4	13	2	1
Oregon	18	3	1	19	1	0
Pennsylvania	29	3	-----	33	12	-----
Rhode Island	8	-----	-----	2	-----	-----
South Carolina	2	4	-----	3	7	-----
South Dakota	8	1	-----	2	0	7
Tennessee	3	2	-----	3	0	-----
Texas	15	0	0	10	0	0
Utah	4	0	-----	2	0	-----
Vermont	4	1	3	1	0	5
Virginia	1	1	0	2	0	1
Washington	15	0	5	33	1	3
West Virginia	17	0	0	14	0	0
Wisconsin	12	0	22	12	3	14
Wyoming	1	0	0	3	1	1

PUBLIC HEALTH ENGINEERING ABSTRACTS

Report of the Committee on Communicable Disease Transmitted Through Milk. J. F. Shigley, H. C. Lawson, and H. E. Shroat. Pennsylvania Association of Dairy and Milk Inspectors, third annual report, 1927, pp. 68–71. (Abstract by R. S. Smith.)

The epidemics appearing in several communities during the past year have furnished direct evidence to substantiate the claim that untiring vigilance is necessary in the production of a clean milk supply. Advocates of more stringent inspection regulations should be given the hearty support of governing bodies in order that the health of the community may be properly safeguarded.

The committee states that continued support should be given all programs of public health education by all interested organizations. Advocates favoring measures intended to make certain measures less stringent have bid for favor during the year. We regret to state that some of these individuals occupy positions rating them as intelligent and influential. Efforts of these and their followers may temporarily interfere. But the facts concerning transmission of disease will eventually nullify such propaganda.

Considerable time is being spent on the problem of tuberculosis, especially as it relates to immunization. Conclusions reached thus far are such as to warrant the continued policy of slaughter of domestic animals affected.

The work of Carpenter, Evans, Polk, and others indicates that *Brucella abortus* and *Brucella melitenis* may be transmitted to man through milk which is contaminated either through the udder or through lack of precautions in handling.

Leersum reports the favorable results of the high-frequency current in the destruction of bacteria in milk. Where carbon electrodes are used, the antiscorbutic vitamin is not destroyed.

Experimental evidence supporting Pasteurization as a means of destroying tubercle bacilli is shown by the fact that milk raised to 62.5° C. and kept at this temperature for 30 minutes insured a noninfective product. It is interesting to note that where Pasteurization is required, the typhoid death rate is considerably less than where it is not generally enforced.

The work of Prucha and Brannon indicates that typhoid germs were active two years and four months after their introduction into ice cream kept in a hardening room the temperature of which, for the most part, was 4° F. above zero The bacteria count varied from 51,000,000 at the beginning to 6,300 at the end of the test.

Pennsylvania has not been free from outbreaks of disease. Several outbreaks of typhoid are cited.

The committee concludes with the statement that it appreciates the growing interest in the production of a clean milk supply. Healthy and clean cows, clean stables and utensils, and medical inspection of employees are means of producing clean, wholesome milk.

Enforcing Pennsylvania Milk Laws. James W. Kellogg. Pennsylvania Association of Dairy and Milk Inspectors, third annual report, 1927, pp. 25–29. (Abstract by R. S. Smith.)

To the bureau of foods and chemistry of the Pennsylvania Department of Agriculture has been assigned the enforcement of the food laws, which have to do with the purity of food and the protection of the public health. The inspection of milk having to do with sanitary conditions, and also for the protection of the public health, comes under the provisions of the laws and ordinances assigned for enforcement to the State, municipal, and township departments of health.

In addition to the general food law, which applies to and regulates all foods, including milk and cream, and defines and prohibits adulteration and misbranding, there are the following specific regulations: The milk and cream law, fixing standards for butterfat and total solids and preventing adulteration by means of removing fat and addition of water; a law prohibiting the coloring and the preserving of milk and cream; the milk container law, which requires all milk sold for drinking purposes to be sold in original containers, and which is designed to prevent contamination and, therefore, to protect the public health; the filled milk law, which defines and fixes standards for evaporated and condensed whole milk and skimmed milk and prohibits the use of foreign fats; and the milk testing law, which is a comprehensive measure designed largely for the protection

of the producer by providing for the licensing of all milk plants and receiving stations, and for the employment of experienced and licensed testers and weighers and samplers to the end that producers will receive correct remuneration for the milk and cream they supply on the basis of accurate Babcock tests.

Food agents are assigned to food-inspection districts, and they purchase samples and institute action if violations occur. Three dairy experts are assigned to the enforcement of the milk testing law. These men are qualified to supervise the operation of plants handling milk and cream, and to see that the Babcock test is performed accurately.

One of the most important phases brought to the authors' attention was the sale, by a few plants, of milk under the name of so-called "Viscolized pasteurized milk." The process consisted of mixing homogenized cream separated from milk, again with the skimmed milk and passed through a second so-called viscolizer at a much lower presure, thereby resulting in a mixing process so that the milk is not at all viscolized or homogenized but is essentially homogenized cream and skimmed milk mixed together and then pasteurized. This process, no doubt, was designed for the express purpose of extending the cream line so that in the case of a quart bottle of milk the cream line is approximately 1¾ inches, giving the appearance of containing at least twice as much cream as is normally present in average milk. The unfairness of this trade practice is well recognized by all those having come in contact with it. The sale of such milk with a falsely extended cream line is a plain fraud on the consuming public and a direct violation of the general food law, as has been declared in a formal opinion by the Attorney General.

Recording Thermometers. Ralph E. Irwin. Pennsylvania Association of Dairy and Milk Inspectors, third annual report, 1927, pp. 43–57. (Abstract by R. S. Smith.)

Four years ago only a few recording thermometers were found in milk-treatment plants in Pennsylvania, and these were seldom correctly adjusted. To-day nearly every plant is equipped with approved and correctly adjusted instruments. Furthermore, many recorders are under the supervision of trained municipal inspectors or the care of service men employed by the manufacturer

Information similar to that given for two preceding years is given under four heads as follows: (1) Requirements of the Pennsylvania Department of Health for the approval of recording thermometers; (2) list of manufacturers of recorders approved; (3) general statement of manufacturers concerning the construction and operation of recording thermometers; (4) instructions for use of recorders furnished by each manufacturer.

Municipal Cooperation in Milk Supervision. W. W. White. Pennsylvania Association of Dairy and Milk Inspectors, third annual report, 1927, pp. 64–67. (Abstract by R. S. Smith.)

In Pennsylvania there are nearly 1,000,000 dairy animals. Of the large volume of milk produced, it is estimated that the per capita consumption is less than one-half pint daily. The problem to be solved is how to increase the consumption of milk to double its present volume and to deliver the milk to the consumer in a clean, sweet, and safe condition.

The author calls attention to the different laws applying to State and municipal officials and the public, governing milk supplies, and to the fact that some laws are seldom applied except in an emergency. He discusses the question of State and county control, stating that there is not now an adequate State control and such is not even attempted, and also that there is no example of county control in the State.

It would seem that the municipality has been chosen by the legislature as the logical control unit in that each type of municipality has been given such au-

thority. Health work, including milk supervision in 110 boroughs, has been taken over by the Pennsylvania Department of Health. This was done because the boroughs were inactive or requested the State to assume control. Some progress has been made in regulating milk supplies in these boroughs and also in townships of the second class, but conditions are far from satisfactory, owing to inadequate regulations and other reasons. A number of municipalities are achieving creditable results by supervising their supplies under the advisory health board regulations of April 4, 1923.

Over 100 cities, boroughs, and townships of the first class have ordinances regulating the distribution of milk. Some of these ordinances are enforced through the service of trained inspectors and are giving almost ideal results. The writer states that the only worth-while supervision in the State at the present time is that carried on by municipalities, either individually or in groups, having ordinances providing reasonable regulations and authorizing the employment of trained inspectors.

A number of near-by municipalities may at present adopt similar ordinances and cooperate in the employment of a full-time trained inspector. This plan is simple and well worth study. Thus a multiplicity of licenses and rules is avoided. Uniformity means simplicity and less opportunity for misunderstandings, promotes fair competition, and prevents the shifting of supplies from town to town.

The author concludes with the statement: "The coordination of the many interests mentioned will not cause confusion but rather a mutual understanding that will lead to a final solution of the problem—an increased consumption of a clean, sweet, and safe milk supply."

Protection of Ontario Water Supplies. A. E. Berry. *Canadian Engineer*, vol. 52, No. 8, February 22, 1927, pp. 231 232. (Abstract by R. E. Thompson.)

The Ontario public health act, which is enforced by the provincial department of health, includes the following provisions: (1) Approval of all proposals for waterworks and sewerage installations, extensions, or alterations; (2) general supervision of all waters used for domestic, agricultural, or industrial purposes; (3) authority to collect returns from all waterworks systems; (4) right to give sanitary control over any defined watershed; (5) authority to issue mandatory orders for the installation or extension of a waterworks or sewerage system; (6) authority to investigate and report on stream pollution at the request of riparian owners. An experimental station is operated in Toronto, where facilities and equipment are available for research on problems associated with waterworks, sewerage, and general sanitation; and (8) branch laboratories are maintained in convenient centers in the Province for the examination of water samples. Sanitary surveys have been carried on in 177 municipalities, involving the examination of all water supplies and the collection of other data of sanitary significance. The information so obtained is plotted on a map of the municipality and forwarded with recommendations to the local officials. Annual inspections are made of tourist camps and refreshment booths; and in 1926, for the first time, certificates of approval were issued to those which conformed to the standards of the department. Regulations passed in 1921 prohibit direct connections between municipal water supplies and polluted fire or industrial supplies. It is required that a residual chlorine content be maintained in all swimming pool waters while in use. Experience has shown that these waters must be the equal of domestic supplies, and some agency must be present to immediately destroy infectious material given off by bathers.

An Ordinance for the Abatement of Nuisances. Publication No. 11, League of Minnesota Municipalities. *American City*, vol. 36, No. 2, February, 1927, pp. 199–200. (Abstract by D. W. Evans.)

This is a model ordinance for small towns and villages. Section 1 defines public nuisances; section 2 lists those nuisances affecting the health; section 3 lists those nuisances affecting morals and decency; section 4 lists those affecting peace and safety; and section 5 provides for the penalty for violation.

Report of Bureau of Sanitary Engineering, Maryland State Department of Health, 1926. 19 pages. (Abstract by I. W. Mendelsohn.)

State institutions.—The bureau carried out considerable waterworks and sewerage works improvements for State institutions, designing, estimating, and acting as general consulting engineers on the projects. The adequacy of existing works was investigated and estimates were prepared for additions.

Report on Municipal Sanitary Engineering Practice in Great Britain. H. W. Streeter. Public Health Bulletin No. 166, United States Public Health Service. 56 pages. (Abstract by Arthur P. Miller.)

This bulletin is the report of the trip of H. W. Streeter, sanitary engineer, United States Public Health Service, to Great Britain in June and July, 1926, under the joint auspices of the League of Nations and the British ministry of health. It covers also observations made on an additional inspection trip authorized by the Public Health Service.

Garbage Park, Oakland, Calif. W. W. Harmon, *American City*, vol. 36. No. 6, July, 1927, pp. 787-790. (Abstract by S. H. Smith.)

Oakland's garbage, formerly disposed of by dumping into the harbor in an attempt to make a sanitary fill, is now dumped 40 miles at sea. One and one-half acres of the sanitary fill has been beautified with trees, shrubs, flowers, and grass, all donated by citizens. Garbage is collected with teams and forty 5-ton wagons and with 22 trucks of 10 to 15 yards capacity. It is hauled to and dumped off the wharf into ten 5-yard bottom dump skips. Electric traveling cranes pick up the skips and dump them at the ends of their 8-foot booms directly into the bunkers of either of two ships. The ships' bunkers have sloping bottoms so that when the side doors are lifted the load slips easily into the sea, the period of unloading being three minutes. An actual cost of $1.10 per ton for disposing of garbage results in a net cost of 69 cents after deducting toll charges, which is a reduction of 87 cents per ton over the former methods. The new method has done away with insanitary conditions along the water front. The distance of 40 miles at sea was selected after trials showed some return of garbage to shore from dumps 25, 30, and 35 miles out.

Birmingham, England, Refuse and Salvage. Anon. *Surveyor*, vol. 71, No. 1845, June 3, 1927, p. 548. (Abstract by J. K. Hoskins.)

A brief summary of statistical data from the 1926-27 report of the Birmingham Corporation Salvage and Stables Committee is presented in this article. The output of refuse per 1,000 population per annum was 225½ tons, a yield that has been gradually reduced from that of former years (259 tons in 1924).

The net cost of the salvage department was 16s. 2.56d. per ton, or £206.42 per 1,000 population per annum. Fertilizer and feeding stuffs amounting to 3,671 tons were recovered, as well as 940 tons of manures and meals and 62 tons of fats.

Refuse Collection and Disposal in Sioux City and Elsewhere. W. H. Carrigg *American City*, vol. 36, No. 4, April, 1927, pp. 487–489. (Abstract by D. W. Evans.)

Collection and disposal of all garbage in Sioux City is handled by the municipality. The city covers an area of 47 square miles, has a population of 80,000, and collections are made twice weekly in the residential district and three times weekly in the congested districts. Horse-drawn wagons are used, each collector owning, maintaining, and operating his own wagon. Wagons are covered with tarpaulin when load is completed.

Householders are required to separate garbage and rubbish and wrap the former in paper. All cans must be carried to and from the curb by the owner. Collections are made regularly and punctually to eliminate unsightly heaps from standing over long periods. Regulation cards are issued to each householder and a system of warning is maintained when rules are infracted.

Rubbish is used to make fills and garbage is sold to a hog feeder at the rate of $250 per month. The longest haul is 5 miles and the average 2 miles. The system appears to be working satisfactorily, as indicated by the low number of complaints handled. Some facts regarding collection costs in other mid-western cities such as St. Louis, Kansas City, Omaha, Sioux Falls, St. Paul, Minneapolis, Duluth, and Winnipeg have been summarized in the article.

DEATHS DURING WEEK ENDED OCTOBER 15, 1927

Summary of information received by telegraph from industrial insurance companies for week ended October 15, 1927, and corresponding week of 1926. (From the Weekly Health Index, October 19, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Oct 15, 1927	Corresponding week 1926
Policies in force	68, 985, 805	65, 563, 132
Number of death claims	9, 993	10, 241
Death claims per 1,000 policies in force, annual rate	7. 6	8. 1

Deaths from all causes in certain large cities of the United States during the week ended October 15, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, October 15, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Oct. 15, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Oct 15, 1927 [2]
	Total deaths	Death rate [1]		Week ended Oct 15, 1927	Corresponding week 1926	
Total (67 cities)	6, 244	11. 0	[3] 11 6	752	[3] 802	[4] 65
Akron	35			10	6	108
Albany [5]	40	17 4	8. 8	4	0	83
Atlanta	56			6	9	
White	27			5	6	
Colored	29	(6)		1	3	
Baltimore [5]	225	14. 3	13. 4	46	34	142
White	164		11. 5	32	23	123
Colored	61	(6)	24. 5	14	11	218
Birmingham	48	11. 6	14. 9	3	9	
White	25		15. 1	1	3	
Colored	23	(6)	14. 5	2	6	
Boston	195	12. 8	12. 7	33	35	92
Buffalo	122	11. 6	14. 0	17	13	71
Cambridge	25	10. 5	13. 7	1	8	18
Camden	23	9. 0	10. 3	4	1	69
Canton	26	12. 0	10. 0	3	2	71
Chicago [5]	579	9. 7	10. 5	72	65	62
Cincinnati	116	14. 7	12. 8	11	26	69
Cleveland	141	7. 5	11. 3	8	27	21
Columbus	66	11. 8	13. 0	9	14	84

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 66 cities.
[4] Data for 61 cities.
[5] Deaths for week ended Friday, Oct. 14, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

Deaths from all causes in certain large cities of the United States during the week ended October 15, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926—Continued.

City	Week ended Oct. 15, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Oct. 15, 1927
	Total deaths	Death rate		Week ended Oct. 15, 1927	Corresponding week 1926	
Dallas	43	10.7	11.3	1	4	
White	33		8.9	1	4	
Colored	10	(6)	27.0	0	0	
Dayton	37	10.7	8.8	5	6	82
Denver	89	16.0	14.6	8	9	
Des Moines	30	10.5	10.4	2	7	33
Detroit	275	10.7	10.8	47	38	71
Duluth	16	7.3	9.7	0	2	0
El Paso	28	12.8	12.9	7	4	
Erie	20			5	1	98
Fall River [5]	24	9.4	10.7	8	5	141
Flint	22	8.0	10.7	8	7	131
Fort Worth	21	6.7	6.6	4	4	
White	15		7.1	3	3	
Colored	6	(6)	2.7	1	1	
Grand Rapids	32	10.5	11.7	7	5	103
Houston	43			4	3	
White	27			4	3	
Colored	16	(6)		0	0	
Indianapolis	80	11.2	14.5	7	10	55
White	62		13.2	4	9	36
Colored	18	(6)	23.7	3	1	183
Jersey City	62	10.0	9.5	14	8	105
Kansas City, Kans	25	11.1	9.4	2	0	39
White	17		7.6	1	0	22
Colored	8	(6)	17.8	1	0	152
Kansas City, Mo	89	12.1	12.8	8	14	
Knoxville	27	13.8		4		
White	23			2		
Colored	4	(6)		2		
Los Angeles	245			22	13	63
Louisville	77	12.5	13.6	4	11	34
White	60		11.9	3	9	29
Colored	17	(6)	23.1	1	2	70
Lowell	[illegible]	11.2	16.5	5	8	96
Lynn	21	10.4	7.0	1	2	26
Memphis	62	18.1	23.9	7	7	
White	39		19.7	4	4	
Colored	23	(6)	31.4	3	3	
Milwaukee	97	9.5	7.2	17	8	79
Minneapolis	89	10.5	9.1	10	6	56
Nashville [5]	28	10.6	19.0	4	8	
White	16		14.9	3	3	
Colored	12	(6)	29.4	1	5	
New Bedford	23	10.0	7.9	1	1	17
New Haven	31	8.7	10.0	1	3	14
New Orleans	147	18.1	16.7	20	13	
White	96		15.3	11	9	
Colored	51	(6)	20.6	9	4	
New York	1,181	10.3	11.2	119	143	49
Bronx Borough	143	8.1	9.5	12	13	38
Brooklyn Borough	414	9.5	10.1	47	56	49
Manhattan Borough	485	13.9	14.6	47	61	55
Queens Borough	108	7.0	7.6	10	11	43
Richmond Borough	31	11.0	11.3	3	2	56
Newark, N. J	88	9.8	10.1	10	12	50
Oakland	56	10.9	11.6	7	6	82
Oklahoma City	29			3	1	
Omaha	56	13.3	11.3	3	7	33
Paterson	28	10.1	7.7	2	0	35
Philadelphia	430	11.0	11.7	51	62	68
Pittsburgh	143	11.6	12.1	21	24	73
Portland, Oreg	64			3	6	32
Providence	66	12.2	13.7	13	7	110
Richmond	43	11.7	17.1	4	6	53
White	28		13.6	2	4	40
Colored	15	(6)	25.6	2	2	76

[5] Deaths for week ended Friday, Oct. 14, 1927.

[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 26.

Deaths from all causes in certain large cities of the United States during the week ended October 15, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926—Continued.

City	Week ended Oct. 15, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Oct. 15, 1927
	Total deaths	Death rate		Week ended Oct. 15, 1927	Corresponding week 1926	
Rochester	68	10.9	10.1	9	11	76
St. Louis	187	11.6	12.1	8	10	----------
St. Paul	62	12.9	11.6	3	4	27
Salt Lake City [5]	34	13.0	11.4	9	6	137
San Antonio	30	7.4	8.9	3	8	----------
San Diego	30	13.6	17.5	1	2	21
San Francisco	137	12.4	14.3	8	7	50
Schenectady	10	5.6	12.3	2	1	60
Seattle	73	----------	----------	3	2	31
Somerville	19	9.7	7.3	2	2	72
Spokane	31	14.8	14.4	0	1	0
Springfield, Mass	34	12.1	12.2	3	3	46
Syracuse	33	8.7	15.8	4	7	51
Tacoma	26	12.7	9.3	4	0	95
Toledo	84	11.0	10.4	5	11	48
Trenton	36	13.7	11.7	3	7	52
Washington, D. C.	104	10.0	12.6	25	12	145
White	68	----------	9.9	13	7	110
Colored	36	(6)	20.7	12	5	220
Waterbury	15	----------	----------	2	3	47
Wilmington, Del	39	16.1	10.5	9	3	223
Worcester	35	9.4	10.8	3	4	36
Yonkers	26	11.1	9.4	4	4	91
Youngstown	37	11.4	9.8	4	8	56

[5] Deaths for week ended Friday, Oct. 14, 1927.

[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14, Houston, 25; Indianapolis, 11, Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30, New Orleans, 26, Richmond, 32, and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended October 22, 1927

DIPHTHERIA

	Cases
Alabama	143
Arizona	31
Arkansas	28
California	151
Colorado	26
Connecticut	29
Florida	30
Georgia	63
Idaho	1
Illinois	166
Indiana	46
Kansas	37
Louisiana	39
Maine	2
Maryland [1]	32
Massachusetts	106
Michigan	83
Minnesota	48
Mississippi	83
Missouri [2]	66
Montana	3
Nebraska	11
New Jersey	119
New Mexico	7
New York	205
North Carolina	159
Oklahoma [3]	141
Oregon	12
Pennsylvania	211
Rhode Island	14
South Carolina	88
South Dakota	6
Tennessee	43
Texas	72
Utah [1]	11
Vermont	4
Washington	10
West Virginia	34
Wisconsin	25
Wyoming	1

[1] Week ended Friday.
[2] Exclusive of Kansas City.

INFLUENZA

	Cases
Alabama	19
Arkansas	37
California	15
Colorado	1
Florida	7
Georgia	47
Illinois	13
Indiana	8
Kansas	8
Louisiana	10
Maine	2
Maryland [1]	11
Massachusetts	5
Minnesota	1
Missouri [2]	1
Nebraska	4
New Jersey	6
New Mexico	1
New York	6
Oklahoma [3]	52
Oregon	11
South Carolina	327
South Dakota	1
Tennessee	24
Texas	46
West Virginia	5
Wisconsin	31

MEASLES

	Cases
Alabama	17
Arizona	1
Arkansas	4
California	43
Connecticut	2
Delaware	1
Florida	2
Georgia	21
Idaho	1
Illinois	35

[3] Exclusive of Oklahoma City and Tulsa.

MEASLES—continued

	Cases
Indiana	8
Kansas	32
Louisiana	6
Maine	18
Maryland [1]	13
Massachusetts	122
Michigan	24
Minnesota	4
Missouri [2]	6
Montana	2
Nebraska	1
New Jersey	15
New Mexico	186
New York	108
North Carolina	154
Oklahoma [3]	27
Oregon	9
Pennsylvania	206
Rhode Island	1
South Carolina	120
Tennessee	25
Texas	9
Utah [1]	4
Washington	39
West Virginia	3
Wisconsin	86
Wyoming	6

MENINGOCOCCUS MENINGITIS

Alabama	1
Arkansas	1
California	6
Connecticut	1
Florida	1
Illinois	7
Massachusetts	1
Michigan	2
Minnesota	1
Missouri [2]	1
Montana	1
New Jersey	2
New York	1
North Carolina	1
Oklahoma [3]	2
Oregon	1
Pennsylvania	6
Rhode Island	1
Texas	1
Utah [1]	1
Washington	1
West Virginia	1
Wisconsin	4

POLIOMYELITIS

Alabama	2
Arizona	4
Arkansas	2
California	32
Colorado	7
Connecticut	9
Georgia	1
Illinois	37
Indiana	11
Kansas	8

POLIOMYELITIS—continued

	Cases
Louisiana	2
Maine	13
Maryland [1]	2
Massachusetts	99
Michigan	18
Minnesota	8
Mississippi	2
Missouri [2]	7
Montana	2
Nebraska	5
New Jersey	11
New Mexico	7
New York	32
North Carolina	1
Oklahoma [3]	10
Oregon	31
Pennsylvania	45
Rhode Island	3
South Carolina	3
South Dakota	5
Tennessee	7
Texas	9
Vermont	7
Washington	22
West Virginia	17
Wisconsin	8
Wyoming	1

SCARLET FEVER

Alabama	16
Arizona	1
Arkansas	10
California	137
Colorado	45
Connecticut	30
Delaware	3
Florida	5
Georgia	23
Idaho	8
Illinois	140
Indiana	78
Kansas	62
Louisiana	10
Maine	35
Maryland [1]	26
Massachusetts	189
Michigan	114
Minnesota	70
Mississippi	27
Missouri [2]	49
Montana	8
Nebraska	37
New Jersey	46
New Mexico	14
New York	158
North Carolina	93
Oklahoma [3]	41
Oregon	18
Pennsylvania	265
Rhode Island	22
South Carolina	41
South Dakota	25
Tennessee	53
Texas	31

[1] Week ended Friday.
[2] Exclusive of Kansas City.
[3] Exclusive of Oklahoma City and Tulsa.

SCARLET FEVER—continued

	Cases
Utah [1]	8
Vermont	10
Washington	53
West Virginia	48
Wisconsin	64
Wyoming	10

SMALLPOX

	Cases
Alabama	5
Arkansas	2
California	10
Colorado	2
Illinois	8
Indiana	2
Kansas	7
Louisiana	3
Michigan	10
Minnesota	1
Mississippi	1
Montana	22
Nebraska	1
New Mexico	3
New York	7
North Carolina	14
Oklahoma [3]	24
Oregon	8
South Carolina	4
South Dakota	10
Tennessee	6
Texas	1
Utah [1]	11
Washington	13
West Virginia	6
Wisconsin	10
Wyoming	1

TYPHOID FEVER

	Cases
Alabama	50
Arizona	3
Arkansas	15
California	16
Colorado	14
Connecticut	4
Delaware	2
Florida	19
Georgia	19
Idaho	1
Illinois	57
Indiana	10
Kansas	17
Louisiana	22
Maine	4
Maryland [1]	31
Massachusetts	16
Michigan	22
Minnesota	6
Mississippi	4
Missouri [2]	23
Montana	1
Nebraska	3
New Jersey	11
New Mexico	25
New York	59
North Carolina	16
Oklahoma [3]	70
Oregon	28
Pennsylvania	35
South Carolina	51
South Dakota	1
Tennessee	36
Texas	17
Utah [1]	6
Vermont	1
Washington	4
West Virginia	36
Wisconsin	6
Wyoming	1

[1] Week ended Friday.
[2] Exclusive of Kansas City.
[3] Exclusive of Oklahoma City and Tulsa.

Reports for Week Ended October 15, 1927

DIPHTHERIA

	Cases
District of Columbia	15
North Dakota	4

MEASLES

	Cases
District of Columbia	2

MENINGOCOCCUS MENINGITIS

	Cases
North Dakota	1

POLIOMYELITIS

	Cases
District of Columbia	2
North Dakota	1

SCARLET FEVER

	Cases
District of Columbia	13
North Dakota	21

TYPHOID FEVER

	Cases
District of Columbia	2
North Dakota	2

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Small pox	Typhoid fever
August, 1927										
Delaware	0	2		1	7		1	8	0	16
September, 1927										
Alabama	3	253	45	834	91	56	3	96	11	274
Colorado	1	104		1	22		18	83	5	61
Florida	3	74	7	30	10	4	7	24	13	29
Minnesota	12	177			17		39	230	2	35
New Jersey	6	330	8	1	25		155	179	6	73
New York	23	678		34	164		309	451	26	309
North Dakota	1	20			9		5	66	4	7
Tennessee	9	163	66	718	142	71	17	155	17	425
Vermont	0	8			39		4	31	0	10

	Cases
August, 1927	
Delaware:	
Anthrax	1
Chicken pox	5
Mumps	1
Ophthalmia neonatorum	1
Whooping cough	3
September, 1927	
Anthrax:	
Colorado	3
New York	1
Chicken pox:	
Alabama	8
Colorado	19
Florida	2
Minnesota	57
New Jersey	80
New York	217
North Dakota	1
Tennessee	50
Vermont	40
Dengue:	
Alabama	4
Florida	1
Dysentery:	
Florida	6
New Jersey	2
New York	20
Tennessee	24
German measles.	
New Jersey	11
New York	29
Hookworm disease:	
Florida	105
Impetigo contagiosa:	
Colorado	4
Lethargic encephalitis:	
Alabama	4
Florida	1
Minnesota	3
New York	21
Tennessee	1
Mumps:	
Alabama	28
Colorado	5
Florida	11
New York	305
Tennessee	10
Vermont	62

	Cases
Ophthalmia neonatorum:	
New Jersey	6
New York	1
Paratyphoid fever:	
Colorado	5
New Jersey	1
New York	8
Tennessee	4
Puerperal fever:	
New York	13
Tennessee	4
Rabies in animals:	
New York	7
Rabies in man:	
New Jersey	1
New York	1
Rocky Mountain spotted or tick fever:	
Colorado	1
Septic sore throat:	
New York	4
Tennessee	5
Tetanus	
Colorado	1
Florida	2
Minnesota	2
New York	9
Trachoma:	
Minnesota	8
New Jersey	9
New York	4
Tularaemia.	
Minnesota	2
Typhus fever:	
Alabama	14
Florida	4
Vincent's angina.	
New York	77
Whooping cough:	
Alabama	84
Colorado	61
Florida	20
Minnesota	90
New Jersey	458
New York	1,032
North Dakota	10
Tennessee	76
Vermont	77

PLAGUE PREVENTION WORK IN CALIFORNIA

Los Angeles.—The rodent division of the Los Angeles Board of Health reports 7,676 rodents collected and 4,474 examined in laboratory from August 21 to October 8, 1927. None was found plague infected during this period.

San Francisco.—The weekly reports of plague suppressive measures in California during the period August 21 to September 24, 1927, show a total of 4,138 rodents received and 3,617 examined. The last case of human plague was reported as occurring on July 17, 1927, in Contra Costa County. The last rodent infection was reported by the State board of health as occurring on August 10, 1927, in Contra Costa County.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 100 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of about 30,870,000. The estimated population of the 94 cities reporting deaths is more than 30,190,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended October 8, 1927, and October 9, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
40 States	2,130	1,931	
100 cities	850	928	936
Measles:			
39 States	908	1,319	
100 cities	238	181	
Poliomyelitis:			
41 States	564	96	
Scarlet fever:			
40 States	1,922	1,977	
100 cities	611	648	577
Smallpox:			
40 States	176	127	
100 cities	30	15	25
Typhoid fever:			
40 States	890	1,376	
100 cities	148	195	179
Deaths reported			
Influenza and pneumonia:			
94 cities	407	384	
Smallpox:			
94 cities	0	0	

City reports for week ended October 8, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	1	1	0	0	0	4	2	0
New Hampshire:									
Concord	22,546	0	0	0	0	0	0	0	0
Manchester	83,097	0	4	0	0	1	0	0	3
Vermont:									
Barre	10,008	0	0	0	0	0	0	0	0
Massachusetts:									
Boston	779,620		37	21	2	0	44		14
Fall River	128,993	0	4	4	0	0	1	0	1
Springfield	142,065	0	2	7	0	0	0	2	0
Worcester	190,757	4	6	4	0	0	0	1	1
Rhode Island:									
Pawtucket	69,760	0	1	4	0	0	0	0	1
Providence	267,918	0	4	4	0	1	1	0	3
Connecticut:									
Bridgeport	(1)	3	8	7	1	1	0	0	1
Hartford	160,197	0	5	6	0	0	0	0	9
New Haven	178,927	0	3	0	0	0	1	8	5
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	11	16	8		1	2	8	5
New York	5,873,356	28	110	143	6	7	23	12	87
Rochester	316,786	0	8	6		2	1	2	3
Syracuse	182,003	4	7	2		0	5	0	4
New Jersey:									
Camden	128,642	14	6	3	0	0	0	0	4
Newark	452,513	4	9	22	5	0	3	17	5
Trenton	132,020	0	4	1	0	0	0	0	4
Pennsylvania:									
Philadelphia	1,979,364	8	53	51		2	3	15	15
Pittsburgh	631,563	6	23	26		1	77	2	17
Reading	112,707	4	2	0	0	0	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	4	13	6	0	0	2	0	4
Cleveland	936,485	10	41	67	4	0	1	16	11
Columbus	279,836	1	7	5	4	1	0	1	2
Toledo	287,380	5	13	3	1	1	9	2	2
Indiana:									
Fort Wayne	97,846	0	3	11	0	0	0	0	2
Indianapolis	358,819	3	13	12	0	0	2	12	10
South Bend	80,091	0	2	1	0	0	1	0	1
Terre Haute	71,071	0	1	1	0	0	0	0	0
Illinois:									
Chicago	2,995,239	14	78	62	4	0	4	11	33
Springfield	63,923	1	2	1	0	0	0	2	0
Michigan:									
Detroit	1,245,824	19	60	54	1	0	1	10	15
Flint	130,316	2	11	8	0	0	0	7	1
Grand Rapids	153,698	0	5	0	0	0	3	0	1

[1] No estimate made.

City reports for week ended October 8, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL—continued									
Wisconsin:									
Kenosha	50, 891	3	1	0	0	0	0	6	0
Madison	46, 385	2	1	0	0	0	0	0	1
Milwaukee	509, 192	16	15	5	0	0	3	8	7
Racine	67, 707	0	2	2	0	0	0	0	0
Superior	39, 671	0	1	1	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110, 502	4	2	1	0	0	1	0	0
Minneapolis	425, 435	21	27	19	0	0	0	3	6
St. Paul	246, 001	10	18	3	0	0	0	5	7
Iowa:									
Davenport	52, 469	0	2	1	0		0	0	
Des Moines	141, 441	0	8	0	0		0	0	
Sioux City	76, 411	2	2	0	0		0	0	
Waterloo	36, 771	0	0	0	0		0	0	
Missouri:									
Kansas City	367, 481	4	9	4	1	2	1	7	4
St. Joseph	78, 342	1	2	2	0	0	0	0	1
St. Louis	821, 543	1	40	28	0	0	2	0	
North Dakota:									
Fargo	26, 403	2	0	0	0	0	0	1	0
Grand Forks	14, 811	1	0	0	0		0	0	
South Dakota:									
Aberdeen	15, 036	0	0	0	0		0	1	
Sioux Falls	30, 127	0	0	0	0		0	0	
Nebraska:									
Lincoln	60, 941	5	1	4	0	0	0	3	0
Omaha	211, 768	1	14	1	0	0	1	0	1
Kansas:									
Topeka	55, 411	0	1	8	0	0	0	0	1
Wichita	88, 367	1	3	7	0	0	1	1	0
SOUTH ATLANTIC									
Delaware:									
Wilmington	122, 049	0	2	2	0	0	0	0	2
Maryland:									
Baltimore	796, 296	11	22	30	2	1	2	1	12
Cumberland	33, 741	0	1	0	0	0	0	0	1
Frederick	12, 035	0	0	0	0	0	0	0	0
District of Columbia:									
Washington	497, 906	0	12	22	1	0	3	0	7
Virginia:									
Lynchburg	30, 395	0	2	5	0	0	0	0	0
Norfolk	(1)	1	3	1	0	0	0	1	2
Richmond	186, 403	0	20	15	0	1	0	0	1
Roanoke	58, 208	0	6	3	0	0	2	0	0
West Virginia:									
Charleston	49, 019	0	2	0	0	0	0	0	0
Wheeling	56, 208	3	2	2	0	0	3	0	2
North Carolina:									
Raleigh	30, 371	0	5	2	0	0	0	0	0
Wilmington	37, 061	0	1	0	0	0	1	0	0
Winston-Salem	69, 031	0	5	0	0	0	3	0	1
South Carolina:									
Charleston	73, 125	0	1	1	17	0	0	0	0
Columbia	41, 225	0	2	0	0		1	0	4
Greenville	27, 311	0	2	0	0	0	0	0	0
Georgia:									
Atlanta	(1)	2	8	6	6	0	2	2	2
Brunswick	16, 809	0	0	0	0	0	0	0	0
Savannah	93, 134		2						
Florida:									
Miami	69, 754	1		0	0		0	1	
St. Petersburg	26, 847		0			0			0
Tampa	94, 743	0	1	4	0	0	0	2	1

City reports for week ended October 8, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58, 309	0	2	0	0	0	0	0	3
Lexington	46, 895	0		1	0	0	0	0	2
Louisville	305, 935	0	10	4	0	0	0	0	7
Tennessee:									
Memphis	174, 533	0	7	3	0	1	11	0	2
Nashville	136, 220	0	5	4	0	0	0	0	3
Alabama:									
Birmingham	205, 670	0	8	12	0	1	0	0	1
Mobile	65, 955	0	2	2	0	0	0	0	0
Montgomery	46, 481	0	3	5	0	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31, 643	0	2	0	0		0	0	
Little Rock	74, 216	0	2	1	0	0	1	0	0
Louisiana:									
New Orleans	414, 493	1	8	9	1	2	0	0	5
Shreveport	57, 857	2	0	6	0	0	0	1	1
Oklahoma:									
Oklahoma City	(1)	0	3	2	3	0	1	0	5
Tulsa	124, 478	0		1	0		0	0	
Texas:									
Dallas	194, 450	0	9	15	0	0	0	0	2
Galveston	48, 375	0	0	1	0	0	0	0	0
Houston	164, 954	0	3	9	0	0	0	0	4
San Antonio	198, 069	0	1	6	0	0	1	0	4
MOUNTAIN									
Montana:									
Billings	17, 971	0	0	0	0	0	0	0	0
Great Falls	29, 883	1	1	0	0	0	0	0	1
Helena	12, 037	0	0	0	0	0	0	0	0
Missoula	12, 668	0	0	0	0	0	1	0	1
Idaho:									
Boise	23, 042	1	0	0	0	0	0	5	0
Colorado:									
Denver	280, 911	14	17	6		3	2	1	6
Pueblo	43, 787	1	3	2	0	1	0	1	0
New Mexico:									
Albuquerque	21, 000	2	1	1	0	0	0	0	1
Utah:									
Salt Lake City	130, 948	15	4	6	0	1	0	0	0
Nevada:									
Reno	12, 665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	(1)	10	7	1	0		9	6	
Spokane	108, 897	7	4	0	0		0	0	
Tacoma	104, 455	2	4	2	0	1	2	0	1
Oregon:									
Portland	282, 383	2	8	6	0	1	5	0	8
California:									
Los Angeles	(1)	1	36	23	14	0	1	7	14
Sacramento	72, 260	2	3	1	0	0	0	6	2
San Francisco	557, 530	16	16	11	0	0	5	8	3

[1] No estimate made.

City reports for week ended October 8, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	1	1	0	0	0	0	1	1	0	2	17
New Hampshire:											
Concord	0	0	0	0	0	1	0	0	0	0	6
Manchester	1	2	0	0	0	0	0	0	0	0	27
Vermont:											
Barre	0	0	0	0	0	0	0	0	0	0	0
Massachusetts:											
Boston	24	38	0	0	0	8	3	7	0	--------	214
Fall River	1	1	0	0	0	1	2	0	1	1	32
Springfield	4	2	0	0	0	2	0	0	0	3	32
Worcester	6	9	0	0	0	2	0	0	0	5	47
Rhode Island:											
Pawtucket	0	0	0	0	0	1	0	0	0	0	15
Providence	8	6	0	0	0	1	1	2	0	0	64
Connecticut:											
Bridgeport	3	1	0	0	0	1	0	0	0	0	22
Hartford	2	1	0	0	0	1	2	0	0	1	38
New Haven	3	1	0	0	0	0	2	0	0	3	38
MIDDLE ATLANTIC											
New York:											
Buffalo	11	16	0	0	0	4	2	0	0	0	116
New York	50	110	0	0	0	[1] 68	35	31	1	110	1,158
Rochester	4	6	1	0	0	1	1	3	0	1	60
Syracuse	5	2	0	0	0	3	2	0	0	6	44
New Jersey.											
Camden	3	0	0	0	0	1	2	0	0	0	22
Newark	6	4	0	0	0	5	2	4	0	41	96
Trenton	0	2	0	0	0	4	0	0	0	1	57
Pennsylvania:											
Philadelphia	36	42	1	0	0	24	15	4	2	40	400
Pittsburgh	25	21	0	0	0	9	3	1	0	9	159
Reading	1	1	0	0	0	0	1	0	0	2	13
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	8	0	1	2	0	5	1	4	0	3	107
Cleveland	18	10	0	0	0	16	3	1	0	22	171
Columbus	6	13	1	0	0	2	1	1	0	0	36
Toledo	8	8	0	0	0	5	2	1	0	6	--------
Indiana:											
Fort Wayne	1	4	0	0	0	2	0	0	0	3	17
Indianapolis	6	17	1	0	0	0	2	7	0	2	80
South Bend	2	1	0	0	0	2	0	0	0	2	11
Terre Haute	1	1	0	0	0	0	0	0	0	0	19
Illinois:											
Chicago	55	31	1	0	0	41	7	4	0	92	638
Springfield	2	2	0	0	0	1	1	1	0	0	19
Michigan:											
Detroit	45	32	2	0	0	11	6	5	0	71	232
Flint	7	18	0	0	0	0	0	2	0	2	26
Grand Rapids	5	7	0	0	0	0	1	0	0	0	24
Wisconsin:											
Kenosha	1	1	0	0	0	1	0	0	0	2	7
Madison	0	8	0	0	0	0	0	0	0	0	5
Milwaukee	16	10	1	0	0	5	1	0	0	11	120
Racine	3	1	1	0	0	0	0	0	0	3	--------
Superior	1	5	0	0	0	0	1	1	0	0	3
WEST NORTH CENTRAL											
Minnesota:											
Duluth	5	1	0	0	0	2	0	2	0	2	16
Minneapolis	30	13	1	0	0	5	1	3	0	1	90
St. Paul	13	7	2	0	0	3	2	0	0	1	49
Iowa:											
Davenport	0	1	0	0	--------	--------	0	0	--------	0	--------
Des Moines	5	6	0	2	--------	2	0	0	--------	0	28
Sioux City	1	0	0	0	--------	--------	0	0	--------	0	--------
Waterloo	2	0	0	0	--------	--------	0	0	--------	1	--------

[1] Pulmonary tuberculosis only.

City reports for week ended October 8, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
WEST NORTH CENTRAL—continued											
Missouri:											
Kansas City	7	8	0	0	0	4	3	3	1	2	75
St. Joseph	3	2	0	6	0	0	0	0	0	0	23
St. Louis	21	10	0	1	0	12	6	5	0	13	220
North Dakota:											
Fargo	1	3	0	0	0	0	0	0	0	0	4
Grand Forks	1	1	0	0			0	0		0	
South Dakota:											
Aberdeen	2	1	0	0			0	0		0	
Sioux Falls	1	0	0	0			0	0		0	5
Nebraska:											
Lincoln	1	0	0	0	0	0	0	0	0	5	15
Omaha	3	2	0	0	0	3	1	0	0	0	34
Kansas:											
Topeka	2	3	0	0	0	0	1	0	1	4	15
Wichita	2	5	1	0	0	1	1	1	0	0	22
SOUTH ATLANTIC											
Delaware:											
Wilmington	3	0	0	0	0	0	1	0	0	0	22
Maryland:											
Baltimore	9	11	0	0	0	7	10	7	0	15	209
Cumberland	0	1	0	0	0	0	0	0	0	0	15
Frederick	1	0	0	0	0	0	0	0	0	0	1
District of Col.:											
Washington	9	11	0	0	0	7	4	4	0	1	124
Virginia:											
Lynchburg	1	0	0	0	0	0	1	4	0	1	6
Norfolk	1	1	0	0	0	3	1	0	0	19	
Richmond	7	8	0	0	0	7	1	1	0	0	57
Roanoke	2	4	0	0	0	0	1	0	0	0	11
West Virginia:											
Charleston	2	4	0	0	0	1	1	2	0	0	13
Wheeling	4	2	0	0	0	0	1	0	0	3	17
North Carolina:											
Raleigh	2	2	0	0	0	2	0	0	0	0	8
Wilmington	1	0	0	0	0	0	0	0	0	1	17
Winston-Salem	2	2	1	0	0	2	1	1	1	0	15
South Carolina:											
Charleston	0	1	0	0	0	2	1	1	1	0	26
Columbia	1	2	0	1		2	1	2		0	22
Greenville	1	1	0	0	0	1	0	1	0	0	5
Georgia:											
Atlanta	6	13	0	1	0	3	2	2	1	4	64
Brunswick	0	0	0	0	0	1	0	0	0	5	7
Savannah	1		0				1				
Florida:											
Miami		2		0				1		0	
St Petersburg	0		0		0	0	0		0		5
Tampa	0	5	0	0	0	1	0	0	0	0	30
EAST SOUTH CENTRAL											
Kentucky:											
Covington	1	1	0	0	0	2	1	0	0	0	20
Lexington		0		0	0	0		0	0	0	12
Louisville	3	4	0	0	0	3	5	0	0	3	66
Tennessee:											
Memphis	3	5	0	0	0	5	4	1	0	0	74
Nashville	4	0	0	0	0	0	3	1	0	0	33
Alabama:											
Birmingham	5	2	1	0	0	1	3	1	2	1	54
Mobile	1	0	0	0	0	0	0	0	0	0	21
Montgomery	1	1	0	0	0	0	0	1	0	0	
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	0	0	0			0	2		1	
Little Rock	1	2	0	0	0	6	1	0	0	0	
Louisiana:											
New Orleans	3	4	0	0	0	20	3	3	0	1	158
Shreveport	0	1	0	0	0	2	0	1	0	0	23

City reports for week ended October 8, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST SOUTH CENTRAL—continued											
Oklahoma:											
Oklahoma City	2	2	0	2	0	0	2	3	0	0	24
Tulsa		2		0				1		0	
Texas:											
Dallas	8	6	0	1	0	2	2	7	1	5	35
Galveston	0	0	0	0	0	1	0	0	0	0	9
Houston	0	2	0	0	0	5	0	2	0	0	58
San Antonio	1	1	0	0	0	9	1	2	1	0	58
MOUNTAIN											
Montana:											
Billings	0	1	0	1	0	0	0	0	0	1	9
Great Falls	1	1	0	0	0	1	0	0	0	0	9
Helena	0	0	0	3	0	0	0	0	0	0	8
Missoula	0	0	1	1	0	0	0	0	0	0	3
Idaho:											
Boise	0	0	0	0	0	0	0	0	0	0	6
Colorado:											
Denver	6	6	0	0	0	11	2	2	1	9	78
Pueblo	0	5	0	0	0	0	1	2	0	0	11
New Mexico:											
Albuquerque	1	0	0	0	0	3	2	0	0	0	10
Utah:											
Salt Lake City	2	1	0	1	0	0	3	2	1	7	20
Nevada:											
Reno	1	0	0	0	0	0	0	0	0	0	1
PACIFIC											
Washington:											
Seattle	8	4	1	0			2	0		4	
Spokane	5	1	2	10			2	0		2	
Tacoma	2	1	0	0	0	0	1	0	0	3	16
Oregon:											
Portland	7	7	3	4	0	4	2	2	0	4	45
California:											
Los Angeles	10	7	3	0	0	13	4	0	0	18	276
Sacramento	1	2	1	1	0	0	1	1	0	2	24
San Francisco	7	14	1	1	0	5	1	2	0	6	157

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Maine:									
Portland	0	1	0	0	0	0	0	1	0
Massachusetts:									
Boston	0	0	0	0	2	1	2	35	4
Springfield	0	0	0	0	0	0	0	1	1
Worcester	0	0	0	0	0	0	1	5	0
Rhode Island:									
Pawtucket	0	0	0	0	0	0	0	1	0
Providence	1	1	0	1	0	0	0	4	0
Connecticut:									
Hartford	0	0	0	0	0	0	0	1	0
MIDDLE ATLANTIC									
New York:									
New York	0	1	11	0	0	0	14	32	3
New Jersey:									
Newark	0	0	0	0	0	0	0	2	0
Pennsylvania:									
Philadelphia	0	0	0	0	0	0	1	1	1
Pittsburgh	0	0	0	0	0	0	1	0	1

City reports for week ended October 8, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	0	0	0	0	0	0	0	6	0
Cleveland	0	0	7	0	0	0	1	2	1
Toledo	0	0	0	0	0	0	1	1	0
Indiana:									
Indianapolis	0	1	0	0	0	0	0	0	0
Illinois:									
Chicago	1	2	0	0	1	1	4	11	1
Michigan:									
Detroit [1]	0	0	0	0	0	0	1	3	1
Wisconsin:									
Milwaukee	4	2	0	0	0	0	0	1	1
Racine	0	0	0	0	0	0	0	2	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	0	0	0	0	0	0	0	0	1
Minneapolis	3	1	0	0	0	0	0	1	0
Iowa:									
Sioux City	0	-------	0	-------	0	-------	0	1	-------
Waterloo	0	-------	0	-------	0	-------	0	1	-------
Missouri:									
Kansas City	0	0	0	0	0	0	1	4	1
St. Louis	0	0	0	0	0	0	1	1	0
South Dakota:									
Sioux Falls	0	-------	0	-------	0	-------	0	1	-------
Nebraska:									
Omaha	0	0	0	0	0	0	1	2	1
Kansas:									
Topeka	0	0	0	0	0	0	0	1	1
Wichita	0	0	0	0	0	0	0	3	2
SOUTH ATLANTIC									
Maryland:									
Baltimore	1	1	0	1	0	0	1	0	0
District of Columbia:									
Washington	0	0	0	0	0	0	0	1	0
Virginia:									
Lynchburg	0	0	0	0	0	0	0	0	1
Roanoke	0	0	0	0	0	0	0	1	0
West Virginia:									
Wheeling	0	0	0	0	0	0	0	4	1
North Carolina:									
Winston-Salem	0	0	0	0	0	1	0	0	0
South Carolina:									
Charleston [2]	0	0	0	0	2	2	0	0	0
Columbia	0	0	0	0	0	1	0	0	0
Georgia:									
Atlanta [3]	0	0	0	0	2	2	0	2	0
Brunswick	0	0	0	0	0	1	0	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Louisville	0	0	0	0	0	0	0	1	0
Tennessee:									
Nashville	0	0	0	0	0	0	0	2	0
Alabama:									
Birmingham	0	0	0	0	1	1	0	0	0

[1] Rabies (human), 1 death at Detroit, Mich.
[2] Dengue: 7 cases at Charleston, S. C.
[3] Typhus fever: 1 case at Atlanta, Ga.

City reports for week ended October 8, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Csaes	Deaths	Cases, estimated expectancy	Cases	Deaths
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	4	0	1	0
Louisiana:									
New Orleans	0	0	0	0	5	1	0	0	0
Texas:									
Dallas	0	0	0	0	1	1	0	1	0
Houston	0	0	0	0	0	0	0	1	0
San Antonio	1	0	0	0	0	0	0	0	0
MOUNTAIN									
Montana:									
Great Falls	0	0	0	0	0	0	0	1	0
Missoula	1	0	0	0	0	0	0	1	0
Colorado.									
Denver	1	0	0	0	0	0	0	2	1
New Mexico:									
Albuquerque	0	0	0	0	0	0	0	1	0
Utah:									
Salt Lake City	0	0	0	0	0	0	0	2	1
PACIFIC									
Washington:									
Seattle	1	-------	0	-------	0	-------	1	0	-------
Spokane	3	-------	0	-------	0	-------	0	0	-------
Tacoma	0	0	0	0	0	0	0	14	1
Oregon.									
Portland	0	0	0	0	0	0	0	2	0
California:									
Los Angeles	2	2	0	0	0	0	1	5	0
Sacramento	0	0	0	0	1	1	0	2	0
San Francisco	1	0	1	0	0	0	0	0	0

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended October 8, 1927, compared with those for a like period ended October 9, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, September 4 to October 8, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927	Sept. 25, 1926	Sept. 24, 1927	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927
101 cities	75	94	84	101	107	[2] 103	127	[3] 120	159	[4] 144
New England	38	93	35	53	73	91	66	109	66	132
Middle Atlantic	53	90	63	106	70	96	81	123	119	129
East North Central	78	90	95	82	128	105	133	[5] 130	188	158
West North Central	75	64	95	125	127	87	143	123	177	145
South Atlantic	136	109	110	112	127	105	162	165	214	[4] 174
East South Central	103	107	109	117	134	82	269	66	253	153
West South Central	86	151	77	138	69	206	210	197	176	197
Mountain	173	153	237	225	137	234	292	[6] 143	173	126
Pacific	91	92	99	92	212	[2] 72	174	120	198	99

MEASLES CASE RATES

	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927	Sept. 25, 1926	Sept. 24, 1927	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927
101 cities	27	20	28	20	38	[2] 27	37	[3] 26	31	[4] 40
New England	35	63	19	30	38	39	21	53	33	118
Middle Atlantic	11	16	10	14	9	30	10	33	11	56
East North Central	20	15	23	18	24	18	25	[5] 13	29	11
West North Central	10	10	12	28	28	20	10	6	26	12
South Atlantic	19	14	9	14	11	36	13	29	15	[4] 32
East South Central	16	10	16	10	10	15	5	20	5	56
West South Central	4	17	4	17	0	0	0	4	0	8
Mountain	100	36	73	45	118	45	109	[6] 0	109	27
Pacific	158	34	212	45	308	[2] 53	327	47	179	45

SCARLET FEVER CASE RATES

	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927	Sept. 25, 1926	Sept. 24, 1927	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927
101 cities	58	52	65	69	79	[2] 67	100	[3] 84	111	[4] 103
New England	80	53	75	102	71	123	104	102	144	139
Middle Atlantic	32	30	44	46	56	42	51	59	57	101
East North Central	61	65	60	89	80	69	98	[5] 102	120	102
West North Central	93	91	129	87	153	60	198	79	216	107
South Atlantic	56	60	48	78	78	107	110	107	99	[4] 127
East South Central	109	97	119	46	83	46	98	117	145	66
West South Central	47	46	30	42	52	50	69	105	69	67
Mountain	73	54	82	99	118	153	319	[6] 72	301	126
Pacific	88	31	118	55	118	[2] 75	174	76	158	76

SMALLPOX CASE RATES

	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927	Sept. 25, 1926	Sept. 24, 1927	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927
101 cities	2	4	2	5	3	[2] 6	1	[3] 4	3	[4] 5
New England	0	0	0	0	0	0	0	0	0	0
Middle Atlantic	0	0	0	0	0	0	0	0	0	0
East North Central	2	3	0	0	1	1	0	[5] 1	1	1
West North Central	2	12	0	22	2	8	2	12	2	14
South Atlantic	2	2	9	4	6	0	4	4	0	[4] 4
East South Central	0	10	0	0	0	10	0	0	10	0
West South Central	0	4	4	4	13	0	0	8	4	4
Mountain	0	9	0	27	0	162	9	[6] 108	9	54
Pacific	16	13	19	37	19	[2] 22	5	24	19	31

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.
[2] Tacoma, Wash., not included.
[3] Kenosha, Wis., and Denver, Colo., not included.
[4] Savannah, Ga., not included.
[5] Kenosha, Wis., not included.
[6] Denver, Colo., not included.

Summary of weekly reports from cities, September 4 to October 8, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927	Sept. 25, 1926	Sept. 24, 1927	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927
101 cities	45	30	53	33	44	[2] 28	42	[3] 19	33	[4] 25
New England	17	39	33	46	9	63	17	12	17	23
Middle Atlantic	34	27	55	37	45	24	28	18	27	21
East North Central	20	7	29	16	26	10	33	[5] 8	23	17
West North Central	50	32	26	24	26	14	40	20	22	28
South Atlantic	104	58	80	31	91	45	114	20	76	[4] 47
East South Central	284	112	248	153	165	87	129	117	145	20
West South Central	39	75	69	38	77	71	47	17	21	71
Mountain	18	63	82	36	36	36	82	[6] 54	64	54
Pacific	27	8	35	16	21	[2] 14	19	18	21	8

INFLUENZA DEATH RATES

	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927	Sept. 25, 1926	Sept. 24, 1927	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927
95 cities	4	4	4	5	6	[2] 3	6	[3] 6	4	[4] 5
New England	0	5	0	0	5	0	2	0	0	5
Middle Atlantic	4	3	3	4	3	2	2	4	3	6
East North Central	4	4	3	2	3	1	5	[5] 5	2	1
West North Central	0	0	4	4	8	2	0	8	6	4
South Atlantic	0	6	6	9	9	11	9	4	6	[4] 4
East South Central	0	10	5	0	10	10	10	25	5	10
West South Central	18	13	22	17	22	9	35	22	13	9
Mountain	36	9	0	9	9	0	18	[6] 0	18	45
Pacific	0	7	7	10	7	[2] 0	7	7	0	3

PNEUMONIA DEATH RATES

	Sept. 11, 1926	Sept. 10, 1927	Sept. 18, 1926	Sept. 17, 1927	Sept. 25, 1926	Sept. 24, 1927	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927
95 cities	51	62	53	60	65	[2] 59	69	[3] 56	64	[4] 65
New England	40	65	54	39	75	70	87	58	33	81
Middle Atlantic	65	67	51	60	70	70	71	62	76	71
East North Central	37	59	40	53	45	44	59	[5] 41	54	58
West North Central	30	44	51	46	55	25	70	33	63	42
South Atlantic	44	50	55	77	79	66	66	66	61	[4] 59
East South Central	41	112	52	102	88	82	109	87	83	82
West South Central	97	65	115	60	93	69	66	95	88	69
Mountain	64	90	118	99	55	54	155	[6] 72	55	72
Pacific	57	52	53	86	78	[2] 63	28	45	53	69

[2] Tacoma, Wash., not included.
[3] Kenosha, Wis., and Denver, Colo., not included.
[4] Savannah, Ga., not included.
[5] Kenosha, Wis., not included.
[6] Denver, Colo., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,800	2,519,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,600	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

THE FAR EAST

Report for week ended October 1, 1927.—The following report for the week ended October 1, 1927, was transmitted by the Eastern Bureau of the Health Section of the Secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Iraq: Basra	0	0	0	0	2	2
Ceylon: Colombo	2	1	0	0	0	0
British India:						
Tuticorin	----	0	1	1	0	0
Negapatam	----	0	----	0	1	1
Madras	----	0	----	3	3	0
Calcutta	----	0	----	15	3	2
Bassein	----	1	----	0	0	0
Rangoon	----	3	----	3	2	1
Siam: Bangkok	0	0	3	3	0	0
Straits Settlements: Singapore	0	0	0	0	1	0

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Dutch East Indies: Banjermasin	0	0	0	0	29	0
French Indo-China: Turane	0	0	3	4	0	0
China:						
Amoy	0	0	10	----	0	0
Shanghai (Int. S.)	0	0	----	6	0	0
Canton	0	0	6	6	0	0
Tientsin	0	0	2	0	0	0
Kwangtung: Dairen [1]	0	0	0	0	0	0

[1] 1 cholera carrier was found during the week.

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Aden Protectorate.—Perim, Kamaran.

Arabia.—Bahrein.

Persia.—Bender-Abbas, Bushire, Lingah.

India.—Karachi, Chittagong, Cochin, Moulmein.

Portuguese India.—Nova Goa.

Federated Malay States.—Port Swettenham.

Straits Settlements.—Penang.

Dutch East Indies.—Batavia, Pontianak, Semarang, Cheribon, Padang, Belawan-Deli, Tarakan, Palembang, Menado, Sabang, Surabaya, Makassar, Balikpapan.

Sarawak.—Kuching.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

Portuguese Timor.—Dilly.

Philippine Islands.—Iloilo, Jolo, Cebu, Zamboanga, Manila.

French Indo-China.—Haiphong, Saigon and Cholon.

China.—Tsingtao.

Hong Kong.

Macao.

Wei-hai-wei.

Formosa.—Keelung, Takao.

Chosen.—Chemulpo, Fusan.

Manchuria.—Yingkow, Antung, Harbin, Mukden, Changchun, Newchang.

Kwantung.—Port-Arthur, Dairen.

Japan.—Nagasaki, Yokohama, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns, Port Moresby.

New Guinea.—Port Moresby.

New Britain Mandated Territory.—Rabaul and Kokopo.

New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.

Western Samoa.—Apia.

New Caledonia.—Nouméa.

Fiji.—Suva.

Hawaii.—Honolulu.

Society Islands.—Papeete.

AFRICA

Egypt.—Alexandria, Port Said, Suez.

Anglo-Egyptian Sudan.—Port Sudan, Suakin.

Eritrea.—Massaua.

French Somaliland.—Djibouti.
British Somaliland.—Berbera.
Italian Somaliland.—Mogadiscio.
Kenya.—Mombasa.
Zanzibar.—Zanzibar.
Tanganyika.—Dar-es-Salaam.
Seychelles.—Victoria.
Portuguese East Africa.—Mozambique, Beira, Lourenço-Marques.
Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.
Mauritius.—Port Louis.
Reunion.—Saint Denis.
Madagascar.—Majunga, Diégo-Suarez, Tamatave.

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from:

Aden Protectorate.—Aden.
India.—Bombay, Vizagapatam.
Persia.—Mohammerah.
Dutch East Indies.—Samarinda.
Union of Socialist Soviet Republics.—Vladivostok.

Belated information:

Week ended September 17: *Pondicherry* and *Karikal*—Nil.

Movement of infected ships

Singapore.—The mail steamer *Janssens* arrived October 1 from Banjermasin infected with smallpox.

ANGOLA

Communicable diseases—July, 1927.—During the month of July, 1927, communicable diseases were reported in Angola, as follows:

Disease	Coast districts	Interior	Land frontier	Total	Disease	Coast districts	Interior	Land frontier	Total
Anchylostomiasis	9	1		10	Puerperal fever	2	1	1	4
Beriberi	10		1	11	Recurrent fever		1	1	2
Chicken pox	9			9	Smallpox	5	17	20	42
Dysentery	27	8	8	43	Tetanus	4			4
Influenza	76	153	276	505	Trypanosomiasis	41	33	35	109
Leprosy	1	3	4	8	Tuberculosis	9	1	5	15
Malaria	287	181	147	614	Typhoid fever	1			1
Measles		1		1	Whooping cough	9	1		10
Mumps	1			1	Yaws	93	76	43	212
Pneumonia	49	8	9	66					

Population: 4,119,000.

CANADA

Communicable diseases—Week ended October 8, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases from seven Provinces of Canada for the week ended October 8, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Influenza	5			3				8
Poliomyelitis	3			6	1	1	16	27
Smallpox				26	2		4	32
Typhoid fever	3	13	32	36	2	3	1	90

Communicable diseases—Ontario—September, 1927 (comparative).—During the month of September, 1927, communicable diseases were reported in the Province of Ontario, Canada, as follows:

Disease	September, 1927		September, 1926		Disease	September, 1927		September, 1926	
	Cases	Deaths	Cases	Deaths		Cases	Deaths	Cases	Deaths
Cerebrospinal meningitis	3	3	4		Influenza	1	2	6	
Chancroid	1		3		Measles	109	1	149	
Chicken pox	150		123		Mumps	118		15	
Diarrhea	13	4			Pneumonia		53		88
Diphtheria	246	23	239	18	Poliomyelitis	10	1	22	
Dysentery	3	5			Scarlet fever	165		141	
Erysipelas	1				Syphilis	129		89	
German measles	10		7		Smallpox	50		23	
Goiter	1				Tuberculosis	119	59	117	43
Gonorrhea	144		133		Typhoid fever	67	1	94	3
					Whooping cough	288	2	232	10

Smallpox.—Smallpox was reported during the month of September, 1927, in 10 localities in the Province of Ontario, the greatest number of cases, viz, 38, being reported at Ottawa. At six localities one case each was reported.

Typhoid fever—Montreal—January 2–October 15, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	June 4, 1927	239	37
Jan. 15, 1927	4	3	June 11, 1927	128	36
Jan. 22, 1927	1	2	June 18, 1927	86	
Jan 29, 1927	3	1	June 25, 1927	75	23
Feb. 5, 1927	1	0	July 2, 1927	66	21
Feb 12, 1927	0	0	July 9, 1927	52	10
Feb. 19, 1927	1	2	July 16, 1927	39	4
Feb 23, 1927	1	1	July 23, 1927	22	9
Mar. 5, 1927	9	1	July 30, 1927	23	10
Mar. 12, 1927	203	4	Aug. 6, 1927	16	5
Mar. 19, 1927	383	14	Aug. 13, 1927	20	5
Mar. 26, 1927	508	22	Aug 20, 1927	14	4
Apr. 2, 1927	649	48	Aug 27, 1927	8	3
Apr. 9, 1927	386	40	Sept 3, 1927	27	
Apr. 16, 1927	175	38	Sept 10, 1927	17	
Apr. 23, 1927	125	43	Sept 17, 1927	13	2
Apr. 30, 1927	105	23	Sept 24, 1927	6	3
May 7, 1927	106	19	Oct 1, 1927	18	
May 14, 1927	367	16	Oct. 8, 1927	14	1
May 21, 1927	770	26	Oct. 15, 1927	5	1
May 28, 1927	353	38			

Communicable diseases—Quebec—Week ended October 8, 1927.—**The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended October 8, 1927, as follows:**

Disease	Cases	Disease	Cases
Chicken pox	11	Scarlet fever	54
Diphtheria	68	Tuberculosis	42
Influenza	2	Typhoid fever	32
Measles	18	Whooping cough	6

Poliomyelitis—Fernie, British Columbia—September 24, 1927.—A case of poliomyelitis was reported September 24, 1927, at Fernie, British Columbia. It was stated that the schools had been closed and the attendance of children under 16 at public gatherings prohibited.

CHINA

Pneumonic plague—Tungliao—Railway line—October 15, 1927.—An outbreak of pneumonic plague was reported October 15, 1927, at Tungliao, Manchuria, China, occurring on a branch railway line.

CZECHOSLOVAKIA

Communicable diseases—August, 1927.—During the month of August, 1927, communicable diseases were reported in Czechoslovakia as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	9		Paratyphoid fever	18	2
Cerebrospinal meningitis	10	6	Puerperal fever	39	18
Diphtheria	422	31	Scarlet fever	862	20
Dysentery	111	12	Trachoma	236	
Malaria	113		Typhoid fever	1,007	46

ECUADOR

Plague—Smallpox—August, 1927.—During the month of August, 1927, seven cases of plague were reported at Guayaquil, Ecuador, and two cases of smallpox.

Plague-infected rats found.—During the same period, of 24,120 rats examined at Guayaquil, 11 rats were found plague-infected.

ESTONIA

Communicable diseases—August, 1927.—During the month of August, 1927, communicable diseases were reported in the Republic of Estonia as follows:

Disease	Cases	Disease	Cases
Diphtheria	16	Tuberculosis	112
Measles	26	Typhoid fever	102
Scarlet fever	145		

Population, estimated: 1,107,059.

GERMANY

Epidemic poliomyelitis—Southeastern cities and towns—October 6, 1927.—Under date of October 6, 1927, epidemic poliomyelitis was reported present in cities and towns of southeastern Germany, the center of the infected region being apparently in the vicinity of Leipzig. The mortality rate was stated to be high. Public schools were reported closed in Leipzig and other localities.[1]

[1] Public Health Reports, Oct. 21, 1927, p. 2628.

HAWAII TERRITORY

Plague-infected rat—Hamakua—August 30, 1927.—A plague-infected rat was reported found at Hamakua, Hawaii, August 30, 1927.

MALTA

Communicable diseases—August, 1927.—During the month of August, 1927, communicable diseases were reported in the island of Malta as follows:

Disease	Cases	Disease	Cases
Broncho-pneumonia	1	Pneumonia	2
Diphtheria	4	Puerperal fever	4
Erysipelas	1	Scarlet fever	4
Lethatgic encephalitis	2	Trachoma	19
Malaria	1	Tuberculosis	18
Malta (undulant fever)	80	Typhoid fever	88
Measles	1	Whooping cough	16

Population, civil (estimated). 227,440.

MEXICO

Typhoid fever—Sarie Valley.—Under date of October 9, 1927, Acting Asst. Surg. John M. Hardy reports four cases of typhoid fever in the Sarie Valley, Mexico, about 20 miles south of Sasabe, Ariz.

PERU

Mortality from communicable diseases—Lima—June-July, 1927.—During the months of June and July, 1927, mortality from certain communicable diseases was reported as follows at the city of Lima, Peru:

Disease	June, 1927, deaths	July, 1927, deaths	Disease	June, 1927, deaths	July, 1927, deaths
Cerebrospinal meningitis	11	9	Plague	1	3
Diphtheria		1	Tuberculosis	86	96
Gastroenteritis	33	26	Typhoid fever	6	1
Influenza		10	Typhus fever	2	8

Population: 196,767.

SENEGAL

Plague—Yellow fever—September 26-October 2, 1927.—During the week ended October 2, 1927, plague and yellow fever were reported in Senegal, West Africa, as follows:

Plague.—In the interior of the country, in the Baol region, in two cantons, cases, 39; deaths, 26; in the Cayor region, cases, 101; deaths, 57. At Dakar, one case.

Yellow fever.—Five fatal cases, of which four were in Europeans and one in a Syrian. The occurrence was distributed as follows: Gueoul, 1; Khombole, 1; Louga, 1 (in Syrian); St. Louis and Thies, 1 each. A suspect case in a European was reported at Gueoul. Many Europeans and Syrians were stated to be under observation at Dakar and Thies.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended October 28, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	Sept. 4-10	21	2	
Canton	do	17	10	
Foochow	do			Several.
Hong Kong	Aug. 28-Sept. 3	1	1	Imported.
Shanghai	Sept. 4-17	5	43	Cases, foreign population; deaths foreign and native in International concessions
India:				
Bombay	Sept. 4-10	1	1	
Calcutta	do	19	13	
Madras	Sept. 11-17	15	6	
Siam				Aug. 28-Sept. 3, 1927: Cases, 4; deaths, 3. Apr. 1-Sept. 3, 1927: Cases, 707; deaths, 486
Bangkok	Aug. 28-Sept. 3	1		

PLAGUE

Place	Date	Cases	Deaths	Remarks
China:				
Tungliao	Oct 15			Outbreak. On branch railway line, Manchuria
Ecuador:				
Guayaquil	Aug. 1-31	7		Rats taken. 24,120; found infected, 11.
Greece.				
Patras	Sept. 25-Oct. 1	1	1	
Hawaii				
Hamakua	Aug. 30			1 plague rat.
India:				
Bombay	Sept 4-10	1	1	
Rangoon	Aug. 28-Sept 3	2	2	
Java:				
Batavia	Sept. 4-10	14	14	Province.
East Java and Madura—Surabaya	Aug 21-27	10	10	
Peru.				
Lima	June 1-30		1	
Do	July 1-31		3	
Senegal:				
Interior—				
Baol	Sept. 26-Oct. 2	39	26	In two cantons.
Cayor	do	101	57	
Urban—				
Dakar	do	1		
Turkey:				
Constantinople	Sept. 18-24	1		

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria:				
Oran	Sept. 21-30	12		
Angola				July, 1927: Cases, 42. Coast districts, 5; interior, 17; land frontier, 20.
British South Africa:				
Northern Rhodesia	Sept. 3-9	18		Natives.
Canada:				
Alberta	Oct. 2-8	4		
Manitoba	do	2		
Ontario	do	26		September, 1927: Cases, 50; corresponding period, year 1926—cases, 23.
Ottawa	Oct. 9-15	23		
Toronto	Oct. 2-8	3		
Windsor	Oct. 2-15	9		Includes Windsor, Walkerville, Ford, Sandwich, and Ojibway.
Saskatchewan—Regina	Oct. 2-8	5		
China:				
Foochow	Sept. 4-10			Present.
Hong Kong	Aug. 28-Sept. 3	2	1	

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended October 28, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Ecuador:				
Guayaquil	August, 1927	2		
Great Britain:				
England and Wales	Sept. 25–Oct. 1			Cases, 122.
Birmingham	Sept. 24–30	1		
Leeds	Sept. 25–Oct. 1	3		
Newcastle on Tyne	do	1		
India:				
Bombay	Sept. 4–10	3	2	
Calcutta	do	6	5	
Madras	Sept. 11–17	3	1	
Portugal:				
Lisbon	Sept. 18–24	1		
Siam				Aug. 28 Sept. 3, 1927: Cases, 24; deaths, 14. Apr. 1–Sept. 3, 1927: Cases, 247; deaths, 66.
Spain:				
Valencia	Sept 25–Oct. 1	1		

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	Sept 11–20	5		Europeans In sourrounding country, cases, 12.
Chosen:				
Chemulpo	Aug. 1–31	2		
Seoul	do	3		
Egypt:				
Port Said	Sept 21–30	1		
Palestine	Sept 19–26	5		Haifa, Safad, Tel Aviv, each one case; Reineh, 2 cases
Peru				
Lima	June 1–30		2	
Do	July 1–31		8	
Poland				Aug. 21–Sept. 3, 1927 Cases, 20; deaths, 1.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Senegal				Sept. 26–Oct. 2, 1927. Cases, 5; deaths, 5. Europeans, 4; Syrian, 1.
Geoul	Sept 26–Oct. 2	1	1	
Khombole	do	1	1	
Louga	do	1	1	Syrian.
St. Louis	do	1	1	
Thies	do	1	1	At Dakar and Thies many Europeans and Syrians stated to be under observation.

Reports Received from June 25 to October 21, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22–Sept. 3	49	9	
Canton	May 1–Sept. 3	57	29	
Foochow	July 24–Aug. 27			Present.
Hong Kong	July 17–23	2	2	
Kulangsu	June 21	1		
Shanghai	June 19–25	2		
Do	July 31–Sept. 3		61	In international settlement and French concession.
Swatow	May 15–Sept. 10	138	13	
Tientsin	Aug. 27–Sept. 10	4		
India	Apr. 17–Aug. 13			Cases, 148,274; deaths, 82,048.
Bombay	May 8–Sept. 3	125	86	
Calcutta	do	669	397	
Karachi	May 29–June 4	1	1	
Madras	June 19–Sept. 10	797	421	
Rangoon	May 8–Aug. 13	18	14	

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

CHOLERA—Continued

Place	Date	Cases	Deaths	Remarks
India, French settlements in	Mar. 30-July 16	171	109	
Indo-China (French)	Apr. 1-Aug. 10			Cases, 13,640.
Annam	do	2,936		
Cambodia	do	335		
Cochin-China	do	1,519		
Saigon	June 4-July 21	10	4	
Laos	July 11-Aug. 10	137		
Tonkin	Apr. 1-Aug. 10	9,713		
Iraq:				
Baghdad	July 24-30	29	18	
Basra	July 17-Sept. 17	383	288	
Japan:				
Yokohama	July 31-Aug. 6	1	1	
Persia:				
Abadan	July 24-Aug. 13	215	183	
Ahwaz	July 31-Aug. 13	20	13	
Minab	Aug. 7-13		23	
Mohammerah	July 17-Aug. 27	194	155	
Nasseri	July 19-31		10	
Philippine Islands				
Manila	July 17-Aug. 27	2		
Bulacan Province	June 7-July 8	3	2	
Leyte Province—				
Barugo	June 29	1	1	
Carigara	June 23	1	1	Final diagnosis not received.
Palo	May 18	1		
Siam	May 1-Aug. 27			Cases, 316, deaths, 192.
Bangkok	do	45	14	
On vessel				
S. S. Adrastus	Reported Aug. 6	1	1	At Yokohama, Japan.
S. S. Morea	Sept 2			At Hong Kong, plague-infected.
S. S. War Mehtar (oil tanker).	Aug 4	1	1	At Saffagha, Egypt.

PLAGUE

Algeria				
Algiers	Aug. 21-31	1		
Oran	Aug 21-Sept. 10	5	4	
Argentina	Jan. 1-Aug 2			Cases, 80; deaths, 44.
Buenos Aires	Apr 10-May 7	4	3	
Cordoba	Jan 11-Aug 6	52	29	
Corrientes	June 1	1	1	
Entre Rios	Mar 29-Aug. 13	8	1	
Santa Fe	Apr 28-May 16	4	3	
Territory—				
Chaco—				
Barranqueras	May 29	2	2	
Formosa	June 25	3	2	
Pampa	July 27-Aug. 2	4		
Rio Negro	Aug. 6	1		
City—				
Merou	Reported July 14			Present.
Rosario	May 7	1	1	
Santa Fe	May 16	4	2	
Azores:				
St. Michaels Island	May 15-Aug. 27	6		
Ribeira Grande	June 12-18	1		
Brazil:				
Sao Paulo	June 3-9	1	1	
British East Africa:				
Kenya	Apr. 24-July 31	73	14	
Mombasa	July 24-30	1	1	
Nairobi	May 22-28	6		
Tanganyika	Mar. 29-May 28		37	
Do	July 24-Aug. 6		10	
Uganda	Jan. 1-Feb. 28	138	121	
Do	Mar. 27-June 18	366	300	
Canary Islands:				
Laguna district—				
Tejina	June 17	1		
Las Palmas	Oct. 8	4		
Ceylon:				
Colombo	May 1-Sept. 3	19	12	Plague rats, 4.
China:				
Amoy	July 3-23			Present in surrounding country.
Mongolia	Reported Oct. 11		300	Approximate.
Tientsin	Aug. 14-20	2		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Ecuador:				
Guayaquil	June 1-July 31			Rats taken, 48,290; found infected, 34.
Egypt	May 1-Sept. 9			Cases, 16; deaths, 4.
Alexandria	June 4-Sept. 2	4		
Beni-Souef	June 4-July 13	5	2	
Biba	June 4-10	1		At Nama.
Dakhalia	June 24-July 9	6	1	
Minia	Aug. 8-9	4		
Port Said	June 24-July 21	4	1	
Suez	Sept. 4	1		
Tanta district	June 4-10	1		
Greece	May 1-June 30	4	3	
Athens	June 1-Aug. 29	3		Including Piraeus.
Mytilene	Aug. 9	1		
Patras	May 30-Sept. 4	8	1	
Hawaii Territory:				
Hamakua	July 15			1 plague rodent.
Honokaa	May 17-23	2	2	
Kukuihaele	Aug. 12-17	1	1	Do.
Paauilo	July 26-Aug. 1		4	
India	Apr. 17-July 16			Cases, 22,523; deaths, 8,580.
Bombay	May 8-Sept. 3	98	83	
Calcutta	Aug. 21-Sept. 3	18	10	
Madras	May 1-Aug. 20	982	430	
Rangoon	May 8-Sept. 3	64	58	
Indo-China (French)	Apr. 1-Aug. 10	50		
Kwang-Chow-Wan	May 21-July 31	73		
Iraq:				
Baghdad	Apr. 8-May 28	12	1	
Java:				
Batavia	May 1-Sept 3	261	262	Province.
East Java and Madura	May 22-July 16	28	27	
Pasoeroean Residency	May 9			Outbreak reported at Nagdiwano
Surabaya	Apr. 17-Aug. 20	60	59	
Madagascar				Mar 16-Apr. 30, 1927: Cases, 250; deaths, 135.
Province—				
Ambositra	Mar 16-July 31	90	92	
Antsirabe	Mar. 16-May 15	8	8	
Miarinarivo (Itasy)	Mar. 16-July 31	69	63	
Moramanga	May 16-July 31	28	27	
Tananarive	Mar. 16-July 31	233	204	
Tananarive Town	Mar. 16-June 30	22	20	
Mauritius.				
Port Louis	May 1-June 30	1	1	
Nigeria	Mar. 1-May 31	228	177	
Peru	Apr.-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	do	13	4	
Lima City	Apr. 1-30	5	1	
Senegal	May 23-Sept. 25			Cases, 1,030; deaths, 606.
Baol	June 2-Sept. 25	140	69	
Cayor Frontier	July 4-Sept. 25	816	473	
Dakar	June 20-Sept. 25	146	94	
Facel	July 6	17	8	
Guindel	June 20-26	11	2	
Louga District	Sept. 18-25	5	4	
M'Bour	July 6-10	28	23	
Medina	June 13-19	2	2	
Pout	July 4-10	1		
Rufisque	May 23-Sept. 25	223	167	
Thies district	do	34	15	
Tivaouane	June 2-July 17	50	32	
Siam	Apr. 1-Aug. 27			Cases, 10; deaths, 7.
Bangkok	May 8-June 11	2	1	
Syria:				
Beirut	June 11-July 10	3		
Tunisia	Apr. 21-July 10	144		
Tunis	July 25-Aug. 1	1		
Turkey:				
Constantinople	May 13-19	1		
Union of South Africa:				
Cape Province—				
Maraisburg district	May 1-14	2	2	Native.
Orange Free State—				
Edenburg district	July 17-26	3	3	Natives; on farm.
Rouxville district	July 24-Aug. 6	2	2	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 21, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
On vessel:				
S. S. Avoroff	June 24-30	1		On Greek warship at port of Athens
S. S. Capafric	Aug. 23	3	1	At Duala, French Cameroons, from Nigeria.
S. S. Elcano	Aug. 19	1		At Piraeus, Greece.
S. S. Madonna	Aug. 24	1		At Dakar, Senegal, from ports south
S. S. Ransholm	Aug. 5	3		At Geflo, Sweden, from Rufisque, Senegal.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr 21-July 31			Cases, 882.
Algiers	May 11-June 30	8		
Oran	May 21-Sept 10	51		
Angola	June 1-July 15	18		
Arabia:				
Aden	July 17-Aug. 1	2	1	
Brazil.				
Bahia	Aug. 7-13	1		
Porto Alegre	July 1-Aug 31	8		
Rio de Janeiro	May 22 Sept. 17	23	19	
British East Africa				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 29-June 18	2	22	
Zanzibar	Apr. 1-May 31	19	7	
British South Africa				
Northern Rhodesia	Apr 30-Aug 26	101	3	
Canada	June 5-Oct 1			Cases, 563.
Alberta	June 12-Oct 1			Cases, 115.
Calgary	June 12-Aug 27	9		
British Columbia—				
Vancouver	May 23-Sept 4	4		
Manitoba	June 5-Sept 17			Cases, 38.
Winnipeg	June 12-Oct. 8	22		
Nova Scotia	Sept. 11-17	1		
Ontario	June 5 Oct 1			Cases, 221.
Ottawa	June 12-Oct 8.	156		
Sarnia	Aug 7-13	1		
Toronto	June 19-Sept. 24	11		
Quebec	June 19-Aug. 27	15		
Saskatchewan	June 12-Oct 1			Cases, 132.
Moose Jaw	Aug 14 Sept. 24	21		
Regina	July 17-Aug 27	10		
Ceylon	May 1-7			Cases, 3; deaths, 1.
Colombo	July 31-Aug. 6	1	1	
China:				
Amoy	May 8-28	1		
Do	July 3-16			Present in surrounding country.
Antung	July 4-31	3		
Chefoo	May 8-14			Present
Foochow	May 8-Aug 27			Do.
Hong Kong	May 8-Aug. 20	20	19	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-July 30	8		
Dairen	May 2-July 3	10	5	
Fushun	May 15-July 30	10		
Harbin	June 13-July 10	4		
Kaiyuan	July 3-9	2		
Mukden	May 22-July 30	6		
Pensihu	July 3-9	1		
Ssupingkai	May 8-July 9	3		
Tientsin	May 8-Sept. 10	18	4	
Chosen	Feb. 1-June 30			Cases, 507; deaths, 205.
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr. 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr. 1-30	1		
Curaçao	May 29-June 4	1		Alastrim.
Ecuador:				
Guayaquil	June 1-30	2		
Egypt	May 7-July 29			Cases, 21; deaths, 2.
Alexandria	May 21-June 17	4	1	
Cairo	Jan. 22-Apr. 15	14	3	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 21, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
France	Apr. 1-July 31			Cases, 201.
Lille	July 24-30	1		
Paris	May 21-July 31	14	2	
Gold Coast	Mar. 1-June 30	41	7	
Great Britain:				
England and Wales	May 22-Sept. 24			Cases, 3,215.
Birmingham	Aug. 14-20	1		
Bradford	May 29-June 11	2		
Cardiff	June 19-July 2	4		
Leeds	July 17-Sept. 3	13		
Liverpool	July 17-30	1		
London	May 15-June 18	2		
Newcastle upon Tyne	June 12-Aug. 13	5		
Sheffield	June 12 Sept. 24	26		
Stoke-on-Trent	Aug. 21-27	1		
Scotland—				
Dundee	May 29-Sept. 3	6		
Greece	June 1-30	14		
Salonika	July 12-Aug. 15		2	
Guatemala:				
Guatemala City	June 1-30		9	
Guinea (French)	June 4-10	9		
India	Apr. 17-Aug 13			Cases, 72,048; deaths, 19,005.
Bombay	May 28-Sept. 3	239	155	
Calcutta	May 8-Sept. 3	394	303	
Karachi	May 15 Aug. 6	10	5	
Madras	May 22-Sept. 3	26	6	
Rangoon	May 8-Sept. 3	185	156	
India, French Settlements in	Mar. 20-June 18	174	111	
Indo-China (French)	Mar. 21-Aug. 10			Cases, 318.
Saigon	May 14-Aug. 19	3	1	
Iraq:				
Baghdad	Apr. 10-Sept 4	3	1	
Basra	Apr. 10-Sept 17	5	4	
Italy	Apr. 10-May 21	13		
Florence	Sept. 18-24	1		
Rome	June 13-July 10	2		
Jamaica	May 29-Sept. 24	37		Reported as alastrim.
Japan	Apr. 3-May 7			Cases, 19.
Nagasaki City	June 20-Aug. 14	26	7	
Taiwan Island	May 21-31	1		
Java:				
Batavia	May 22-Aug. 20	7		
East Java and Madura	Apr. 24-Aug. 20	17		
Latvia	Apr. 1-30	1		
Mexico	Mar. 1-May 31			Deaths, 557.
Durango	June 1-30		1	
La Oroya	Apr. 1-June 30			Present.
Monterey	July 1-31	6	4	
San Luis Potosi	May 29-Aug. 13		11	
Tampico	June 1-July 31	1	2	
Torreon	Aug. 7-Oct. 1		2	
Morocco	Apr. 1-July 31	207		
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in 2 localities.
Pasir Residency	Apr. 30-May 6			Epidemic outbreak.
Samarinda Residency	May 21-27			Do.
Nigeria	Mar. 1-June 30	2,352	570	
Paraguay:				
Asuncion	July 10-23		2	
Persia:				
Teheran	Feb. 21-June 22		14	
Poland	Apr. 10-Aug. 6	20	2	
Portugal:				
Lisbon	May 29-Sept. 17	19	1	
Oporto	Sept. 3-9	1		
Senegal:				
Medina	July 4-10	7		
Siam	Apr. 1-Aug. 27			Cases, 222; deaths, 53.
Bangkok	May 1-July 23	13	7	
Spain:				
Madrid	Aug. 1-31		1	
Valencia	May 29-June 4	2		
Straits Settlements	June 12-18			Cases, 3.
Singapore	Apr. 1-June 18	7	2	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 21, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Sumatra:				
Medan	June 5–Aug. 20	3		
Switzerland.				
Berne	June 26–July 2	1		
Syria:				
Damascus	Aug. 11–31	3		
Tunisia	Apr. 1–June 10			Cases, 10.
Tunis	June 1–10	1		
Union of South Africa:				
Cape Province	July 7–Aug. 20			Outbreaks.
Elliott district	May 11–June 10			Do.
Idutywa district	July 3–9			Do.
Kalanga district	May 11–June 10			Do.
Mount Ayliffe district	July 31–Aug. 6			Do.
Orange Free State	Aug 7–13			Do.
Transvaal—				
Barberton district	May 1–7			Do.
Venezuela·				
Maracalbo	July 12–Sept 12		3	

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr 21–July 20			Cases, 399, deaths, 39.
Algiers	May 11–Sept. 10	27		
Oran	May 21–Aug. 31	34		
Bulgaria	Mar 1–July 10			Cases, 226; deaths, 20.
Sofia	June 4–Aug 5	2		
Chile·				
Antofagasta	Apr 16–May 31	1		
Concepcion	May 29–June 4		1	
La Calera	Apr 16–May 31	1		
Ligua	Mar 16 31	2		
Puerto Montt	Apr 16–May 31	1		
Santiago	do	5	1	
Talcahuano	July 10–16		1	
Valparaiso	Apr. 16–Sept. 3	5	3	
China				
Manchuria—				
Harbin	July 25–31	3		
Mukden	May 29–June 4	1		
Tientsin	July 10–16	1		
Chosen	Feb. 1–June 30			Cases, 721; deaths, 60.
Chemulpo	May 1–July 31	1		
Gensan	do	4		
Seoul	Apr. 1–July 31	32	3	
Czechoslovakia	do			Cases, 55.
Egypt	May 28–July 29			Cases, 120; deaths, 13.
Alexandria	May 21–Aug. 5	13	3	
Cairo	Jan 15–June 21	42	16	
Estonia	Apr. 1–June 30			Cases, 5.
Greece	June 1–30	2		
Athens	June 1–July 31		9	
Guatemala.				
Guatemala	Aug. 25–31		1	
Iraq:				
Baghdad	Apr. 24–30	1		
Irish Free State:				
Cork County	July 3–9	1		In urban district.
Latvia	Apr. 1–July 31	32		
Lithuania	Feb. 1–July 31	347	42	
Mexico	Feb. 2–May 31			Deaths, 140.
Mexico City	May 29–Sept 24	59		Including municipalities in Federal district.
San Luis Potosi	July 31–Aug. 6		1	
Morocco	Apr. 1–Aug. 20	952		
Palestine	May 24–Sept. 19			Cases, 24.
Haifa	May 24–Aug. 29	8		
Jaffa	Aug. 2–15	2		
Jerusalem	June 28–Aug. 15	3		
Manheim	May 17–23	1		In Safad district.
Nazareth	July 19–25	1		
Safad	May 17–Aug. 8	10		
Peru:				
Arequipa	Apr. 1–30		1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 21, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Poland	Apr. 10-Aug. 24	1,060	100	
Portugal:				
Lisbon	May 29-June 4	1		
Oporto	Aug. 20-27	1		
Rumania	Apr. 3-July 23	956	64	
Spain:				
Seville	Aug. 19-25		2	
Syria:				
Aleppo	Sept. 11-17	2		
Tunisia	Apr. 22-July 20			Cases, 158.
Tunis	July 5-Aug. 21	2		
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa	Apr. 1-30			Cases, 55; deaths, 8, native. In Europeans, cases, 2.
Cape Province	Apr. 1-Aug. 27	42	5	
Albany district	June 5-11			Outbreaks.
East London	May 22-28	1		Do.
Glen Gray district	May 1-7			Do.
Kentani district	June 26-July 2			Do.
Port Elizabeth	Aug. 7-13	1		
Qumbu district	May 1-7			Do.
Umzimkulu district	June 26-July 2			Do.
Natal	Apr. 1-Aug. 6	7	3	
Impendhle district	June 5-11			Do.
Orange Free State	Apr. 1-July 23	5		
Transvaal	Apr. 1-30	1		
Johannesburg	July 3-Aug. 20	19	5	
Yugoslavia	May 1-Aug. 31			Cases, 24; deaths, 5.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Ashanti:				
Obuasi	Aug. 6	1	1	
Dahomey (West Africa):				
Porto Novo	July 1	1	1	In Syrian woman.
Gold Coast	Apr. 1-June 30	60	22	
Do	Aug. 4	2		
Ivory Coast	July 29	1	1	
Liberia:				
Monrovia	May 29-July 8	4	5	
Senegal	May 27-July 31			Cases, 5; deaths, 2.
Dakar	July 9	1		
Do	Aug. 8	2	2	
Do	Sept. 17			Present.
Island of Goree	Aug. 22-Sept. 4	2	2	
Khombole	Aug. 1-14	3		
M'Bour	May 27-June 19	5	5	
Ouakam	June 2-Aug. 14	4	2	
Pout	Sept. 19-25	1	1	
St. Louis	Aug. 1-14	2	2	
Thies	July 10	1	1	In European.
Do	Sept. 12-25	3	3	
Tiaroye	Aug. 22-Sept. 4	1	1	
Tivaouane	May 27-Sept. 11	6	5	
Togoland:				
Meiatza	Aug. 15-21	1	1	

TREASURY DEPARTMENT

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UNITED STATES PUBLIC HEALTH SERVICE

HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

Asst. Surg. Gen. R. C. WILLIAMS, *Chief of Division*

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PUBLIC HEALTH REPORTS

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PREVALENCE OF POLIOMYELITIS IN THE UNITED STATES

Reports from 43 States for the week ended October 22, 1927, showed a decrease of 5 per cent in reported cases of poliomyelitis as compared with the preceding week, and 17 per cent as compared with the week ended October 8, 1927. The highest prevalence this year was reached during the third week of September.

A comparison of reports for the weeks ended October 15 and October 22, 1927, shows an increase of 12 cases in Pennsylvania and 12 in Oregon, but Ohio, where the epidemic was severe a few weeks ago, dropped from 77 cases to 46.

Reports for the corresponding week of the years 1926 and 1925 were received from 39 States. These States reported 428 cases of poliomyelitis in 1927, 70 cases in 1926, and 164 cases in 1925. The figures by States are given in the table on page 2726. Reports for the week ended October 29 will be found on page 2735.

SUMMARY OF REPORTS OF THE PRINCIPAL COMMUNICABLE DISEASES FOR JULY, AUGUST, AND SEPTEMBER, 1927

The following summary is based on preliminary telegraphic reports for the 13 weeks July 3 to October 1, 1927, and the corresponding weeks of the years 1926 and 1925. Preliminary reports are used for all three years, as final reports for 1927 are not yet available. The figures are incomplete, but it is not probable that the final figures will materially differ in the comparison of one year with another.

DIPHTHERIA

The increase over the two preceding years in number of cases of diphtheria which was noted for the first six months of this year continued during the summer months.[1] The figures for 37 States for 13 weeks are: 1927, 13,450 cases; 1926, 11,500; 1925, 12,300 cases.

In 1927 the smallest number of cases was reported for the week ended August 6; in 1926, the smallest number was for the week ended August 21, and in 1925 for the week ended July 23.

[1] Public Health Reports, Oct. 7, 1927, p. 2443.

MEASLES

Last year the figures for measles were unusually high, 21,700 cases being reported for the 13 weeks, as compared with 13,536 cases this year, and only 8,400 cases in 1925. Most of the cases for the three months each year occurred in July, the lowest point for measles being reached in September. The figures for measles fluctuate widely from year to year and during the same year in different places, but the seasonal prevalence is marked, with the peak in April or May, and the lowest point in September.

POLIOMYELITIS

Poliomyelitis (infantile paralysis) was more prevalent during the summer of 1927 than during either of the two preceding years. Thirty-seven States reported 4,000 cases of poliomyelitis for the 13 weeks in 1927, 1,100 in 1926, and 3,200 in 1925. The greatest number of cases in 1927 was reported for the third week of September, while in the other years the greatest prevalence occurred during the first week of September. This year poliomyelitis has been unusually prevalent during October. The rate of decrease in number of cases being slower than the rate in 1926 or 1925.

Some States which reported many cases of poliomyelitis in 1927 did not report for the other two years. If all States could be included, the comparison would be more unfavorable for this year.

SCARLET FEVER

Thirteen thousand five hundred cases of scarlet fever were reported for the 13 weeks July 3 to October 1, 1927. The figure for this period of 1926 was the same. In 1925, 10,600 cases were reported during the corresponding 13 weeks. The least number of cases was reported for the last week of August each year.

SMALLPOX

Smallpox was more prevalent during the summer of 1927 than during the same period of 1926 or 1925. The figures for 37 States for 13 weeks are as follows: 1927, 2,900 cases; 1926, 2,400 cases; 1925, 2,000 cases. Fortunately, the virulent type of smallpox has not appeared in the United States this year, and very few deaths from this disease have been reported. Smallpox is much more prevalent in the winter months than during the summer.

TYPHOID FEVER

The incidence of typhoid fever was lower during the summer of 1927 than it was during either of the two preceding years. The figures for 13 weeks for 37 States are as follows: 1927, 11,200 cases; 1926, 13,900 cases; 1925, 15,200 cases.

In 1927 the greatest incidence of typhoid fever occurred about the 1st of September; in 1926 it came about September 15, and in 1925 it came about the middle of August.

In the year 1925 there was a slight reaction from the steady decline in typhoid fever case and death rates which had been recorded for several decades. The death rate for typhoid fever in the registration area dropped from 35.9 per 100,000 population in 1900 to 6.7 in 1924. In 1925 the rate rose to 8.0 per 100,000. The preliminary reports indicate that 1927 may record a new low death rate for this disease.

MOIST SAND METHOD OF APPLYING PARIS GREEN FOR DESTRUCTION OF SUBSURFACE-FEEDING MOSQUITO LARVAE[1]

By T. H. D. Griffitts, *Epidemiologist, United States Public Health Service*

Since the introduction of the use of Paris green as an anopheline larvicide,[2] there has been general regret that some method could not be used whereby this poison might be applied in the destruction of mosquito larvæ which feed below the surface, or at the bottom.

On September 23, 1926, the writer treated a brackish pool which was teeming with larvæ of *A. taeniorhynchus* and *A. sollicitans*. An indefinite, but heavy, mixture of Paris green with wet sand was applied, with the result that all larvæ were killed within 24 hours. It was noted that the wet sand carried the Paris green to the bottom, the greenish colored sand showing quite distinctly on the sandy bottom of the pool, with a very definite amount of sand and Paris green remaining on the surface of the water. Following this experiment it was determined to carry out further experiments, using Paris green rubbed up, or mixed, with moist sand in the proportions generally used in dusting against anopheline larvæ.

The following experiments were carried out in the vicinity of the Biloxi, Miss., station for the survey of the salt marsh areas of the South Atlantic and Gulf States, with larvicidal results as shown.

Experiment No. 10426 (in field), October 4, 1926.—Pool of 50 square feet, average depth of 6 inches, formed by nonsaline water running over fresh oyster shells at a Cadet ("Caddie") Point oyster shucking plant. Pool teeming with larvæ of *C. quinquefasciatus*. (Twenty-five emergences from larvæ taken from pool were *C. quinquefasciatus*.) A similar pool separated from the experimental pool by a dam of oyster shells was used as a control. Paris green was thoroughly mixed with moist, fine beach sand, 1 part of Paris green to 99 parts of moist sand (both by volume). The mixture was thrown broadcast over the pool at 1.15

[1] Original preliminary notes submitted for publication Oct. 25, 1926.

[2] The use of arsenic as a larvicide for anopheline larvæ. By Special Expert M. A. Barber, and Technical Assistant T. B. Hayne. Transactions of the Third Conference of Malaria Field Workers. Public Health Bulletin No. 126, September, 1922.

p. m., and at 4.15 p. m.—three hours later—it was estimated that 98 per cent of the larvæ were dead; no diminution of larvæ in the untreated pool, A tablespoonful of Paris green was used in the sand applied.

Experiment No. 10625 (laboratory), October 6, 1926.—Several hundred very small larvæ (24 hours old) of *A. taeniorhynchus* and *A. sollicitans* (determined later by development to imagos) were placed in a 1-gallon sirup can containing nonsaline water to a depth of 4 inches. Treated with just as much of the Paris green sand mixture as could be pinched hard between the thumb and two finger tips. Treated at 9.15 a. m. In 25 minutes, three larvæ were dead; in 50 minutes (at 10.05), all were dead.

Experiment No. 10626 (in field), October 6, 1926.—Natural pool, area 9 square feet, in elevated sandy marsh. Three other small pools nearby used as controls; all heavily infested with very small *A. taeniorhynchus* and *A. sollicitans* larvæ, and exposed to sun. Treated with one tablespoonful of Paris green moist sand mixture (1 to 100) at 10.35 a. m. At 4.40 p. m. (5 hours and 45 minutes after treatment), it was found that the sandy pools had practically dried up. Two of the control pools also were about dry. By pouring sea water in the holes, the larvæ were floated; apparently all were alive in the controls and about 75 per cent were dead in the treated pool. It was concluded that on the drying of the treated pool many of the larvæ were stranded before getting a dose of the Paris green.

Experiment No. 10826 (in field), October 8, 1926.—Slightly brackish pool, area 10 square feet, with greatest depth 9 inches, and a small arm 2 to 3 inches deep. Heavily infested with *A. taeniorhynchus* and *A. sollicitans* larvæ, about 3 days old. Small pool (3 square feet) dug to water level in area just recently dried used as control. Several hundred larvæ from pool to be treated placed in this pool. About 2 tablespoonfuls of Paris green moist sand mixture applied to the pool, 10 square feet, at 10.30 a. m. This pool was examined 22 hours after application, and our notes read as follows:

One dipperful (about 80 larvæ), 3 alive.
Two dipperfuls (about 200 larvæ), all dead.
Three dipperfuls (about 150 larvæ), 3 alive.
Three dipperfuls (about 200 larvæ), all dead.
This would mean a mortality of 99 per cent plus.

Experiment No. 10926 (laboratory), October 9, 1926.—Collection of *Aëdes* larvæ (*taeniorhynchus* and *sollicitans*) and *Anopheles* (*crucians*) collected in brackish water on Deer Island on October 8. Approximately 100 *Aëdes* larvæ, all sizes, and 12 third-molt *Anopheles crucians* larvæ were kept in the brackish water for the experiment. One-fourth teaspoonful of the 1 to 100 Paris green-moist sand mixture was added to the quart fruit jar half filled with water, at 11.02 a. m. At 12.05 p. m. (1 hour and 3 minutes later) all *Aëdes* larvæ and nine of the *Anopheles* larvæ were dead. At 12.34 only one (small) *Anopheles* larvæ was alive. Ten *Stegomyia* (*Aëdes aegypti*) larvæ were added to the jar at 11.38 a. m. All larvæ were dead when checked again at 9 a. m. the next day.

Experiment No. 101226 (laboratory), October 12, 1926.—Larvæ: *Stegomyia* (*Aëdes aegypti*), about 25 large larvæ, an equal number of second instar, and innumerable tiny larvæ. Of the Paris green-moist sand mixture, one-fifth teaspoonful (about one-eighth grain of Paris green) was applied at 4.40 p. m. Of the tiny larvæ, 75 per cent were killed within 30 minutes. No further observation was made until the next day—16 hours after the dose was given—when all larvæ were dead.

Experiment No. 101326 (laboratory), October 13, 1926.—Larvæ used; large, *Aëdes* (*taeniorhynchus* and *sollicitans*). Thirty-two larvæ were put into brackish water filling a quart tomato can to a depth of 1 inch. Paris green-moist sand mixture (one-sixteenth teaspoonful) was carefully placed in water at one side

of the can, sand occupying no more than three-fourths inch of the bottom of the container. The poisoned sand was added at 11 a. m.; all larvæ were dead at 12.05 p. m. (time: 1 hour, 5 minutes).

Experiment No. 101426 (in field), October 14, 1926.—Small sand-lined pool dug in marsh near Point Cadet; teeming with *Aëdes sollicitans* and *taeniorhynchus* larvæ (full-grown). Paris green-moist sand (a pinch) placed at one end of pool. Checked next day; only a small percentage dead. Sand had caved away and covered the Paris green, apparently. On the 15th, again treated, and 16 hours later all larvæ were dead.

Experiment No. 101426 (in field), October 16, 1926.—Shallow, brackish pools in salt meadow one block north of east end of Back Bay bridge. Average depth of water, 3 inches; pools heavily infested with *A. sollicitans* and *taeniorhynchus*, and covered with fine salt grass. Paris green-moist sand (1 to 100) broadcast at 10.30 a. m. All larvæ were dead when inspected three and one-half hours later.

Experiment No. 101626A (in field), October 16, 1926.—Pool in excavation in clay under bridge, area of pool 10 square feet, and average depth 6 inches; teeming with all sizes of *C. quinquefasciatus* larvæ. Treated with 1 to 100 Paris green-moist sand mixture at 10.45 a. m.; all larvæ were dead in 3 hours 15 minutes. (Nearby control pool same as before.)

Experiment No. 102826 (in field), October 28, 1926.—Three pools employed: One for Paris green-moist sand mixture, one for undiluted Paris green, and the other as control. Temperature of water in each pool, 73° F; total salinity, 4 per cent. Pool No. 1 (control) teeming with *A. taeniorhynchus* and *A. sollicitans* larvæ three-fourths grown. Size of pool, 10 square feet. Pool No. 2, 3 square feet of surface, and the bottom practically covered with grass placed in it. Stocked with approximately 1,000 larvæ from "control" pool and treated at 9.25 a. m. with five teaspoonfuls of a mixture (1 to 100) of Paris green and moist sand (builder's sand, coarser than previously used beach-sand). Five teaspoonfuls of this mixture contained 1½ grains of Paris green. Pool No. 3, 8 square feet of surface, stocked with approximately 1,000 larvæ from "control" pool and treated at 9.30 a. m. with 3 grains of Paris green (undiluted), the powder being carefully dusted over pool. Pools examined at 12.30 to 12.45. No dead larvæ in control pool; in pool No. 2 all larvæ were dead; in pool No. 3 only a few dead (checked) four and one-half hours after treatment. The field notes are as follows: "No. 2, 100 per cent; No. 3, undiluted Paris green, less than 50 per cent killed." A check 24 hours later showed only one live larvæ in pool No. 3.

Experiment No. 33027 (in field), March 30, 1927.—One acre of breeding ground was treated in this experiment. It is a part of a 600-acre salt marsh, with surface elevation well above usual high tide. The soil is a stiff muck, and literally covered by hoof-prints of cattle, so that instead of a more or less continuous sheet of water there were thousands of individual puddles. On this acre there were applied 99 pounds of moist sand thoroughly mixed with three-fourths pound of Paris green (a mixture of 1 to 132). The Paris green-sand mixture was broadcast by hand between the hours of 10 and 11 in the forenoon. Temperature of the water, 75° F.; wind, SE., with a velocity of about 6 miles per hour; weather fair in forenoon, cloudy in afternoon. Larvæ present: *Anopheles crucians*, *Aëdes sollicitans* and *Culex salinarius*, practically all full-grown. Before the application, 52 dips gave 23 *Anopheles* larvæ and 131 non-*Anopheles* larvæ. The final check on mortality gave, in 52 dips, 10 *Anopheles* larvæ and 90 non-*Anopheles* larvæ—a mortality of 57 per cent for *Anopheles* and 31 per cent for the non-*Anopheles*. The poor results here may have been due to one or more conditions. In a hoof-print area the distribution may not have been general enough to reach

all pockets, which may not be necessary where the larvæ may travel extensively and get the poison; many of the full-grown larvæ may have quit feeding prior to pupation.

Experiment No. 4227 (in field), April 22, 1927.—Pool of 50 square feet, average depth of water 2½ inches; densely covered with salt marsh vegetation; soil, sand clay; water, foul. Temperature of air 88° F., water 70° F (brackish). Larvæ: *Culex salinarius* and *Aëdes sollicitans* (only a few of latter), all sizes. Time of applying Paris green-sand mixture 1.30 p. m. Before treating, average number of larvæ per dip, 38. Paris green-sand mixture, 1 to 100. Amount used, in proportion of one pound of Paris green per acre of water surface. Check on mortality made 20 hours after treatment; average number of live larvæ per dip was 0.6 in a total of 105 dips—a destruction of about 98 per cent.

Experiment No. 92727 (in field), Horn Island, September 27, 1927.—Two areas were selected for this experiment: One a long, narrow pool with grassy edges; the other a depression in salt meadow overgrown with marsh grass (*Paspalum vaginatum*). In the former the water showed a salinity of 1 per cent; temperature of water 87° F.; atmospheric temperature, 85° F.; weather clear, with a 15 to 20 miles SE. wind. Larvæ (numerous) in first pool—*A. sollicitans*, third instar; in the second pool (fresh water), there were great numbers (average 50 per dip) of *Aëdes sollicitans*, second instar, and full-grown larvæ of *P. ciliata*. The surface of the two areas was 905 square feet. Time treated, 10.30 to 11 a. m. Mixture used, 1 part by volume of Paris green to 99 parts of rather coarse, moist beach sand. The ratio of Paris green-sand mixture used was 1 pound of Paris green per acre. The application was by hand-broadcasting. Check on mortality was made two hours after treatment. In the first pool, not one live larva could be found in 20 minutes' search; masses of dead larvæ were found in different parts of the pool. In the second pool, not an *Aëdes* larva remained alive. There were about 50 of the large *P. ciliata*, all seemingly affected by the poison. Five of these were placed in a container with the pool water and four died within three hours, the remaining one dying about four hours later. It is not known whether the *P. ciliata* larvæ secured their lethal dose from the Paris green-sand on the bottom or from devouring the already poisoned *Aëdes* larvæ.

Experiment No. 93027 (in field, Round Island, Miss.), September 30, 1927.—A salt pool (salinity 11 per cent), occupying 390 square feet. As a salt-water pond and an *Aëdes* breeder, unusual conditions existed. A recession in the shore line of the island had occurred through strong wave action until this pool had formed, apparently having existed for several years and receiving additional water at unusually high wind tide, and from a small marsh area adjacent when rains occur. No rain water had entered it from the marsh for several weeks. Driftwood, palmetto roots, small chunks, boards, pine bark, pine tags, fine "granular" and stick flotage, together with over-fallen salt grass (*Distichlis spicata* and *Fimbristylis spadicea*) almost completely covered the water surface. The pool was found teeming with *Aëdes sollicitans* larvæ in all stages. Temperature of water was 84° F.; depth of water, from very shallow to 2 feet; average depth, 1 foot. A portion of the Paris green-sand mixture remaining from that prepared the preceding day (1 to 99 mixture) was broadcast by hand in proportion of 1 pound of Paris green per acre. Two hours later, three members of the field party estimated the mortality at 95 per cent. All of the larvæ remaining alive at the time of check were of the third instar and notedly sluggish. Ten of these were collected in a clean container and kept in water from the pool; all died within three hours. This pool represented the most difficult type of breeding place to be found for testing the method; much of the sand fell on drift and flotage, but the larvæ obtained lethal doses promptly.

DISCUSSION

Microscopic examination of grains of sand after being mixed with Paris green (in the ratio of 1 part of Paris green to 99 parts of moist sand) shows that a large percentage of the grains have particles of Paris green adhering to them. Sand mixed with Paris green and recovered from the bottoms of containers and pools shows Paris green still adhering to the grains of sand.

An interesting feature is that, in these experiments, some Paris green is left on the surface of the water, either free or adhering to particles of sand that float. In all of the experiments, when there were present *Anopheles crucians*, as well as *Aëdes*, sufficient Paris green remained on the water surface to kill the *Anopheles* larvæ also.

Generally, the production of salt-marsh mosquitoes takes place in relatively shallow water, and for these species this method is particularly effective. As to the destruction of *Aëdes aegypti* and other species in shallow containers, there is no doubt. It may be that the dosing will have to be adjusted to meet conditions in deep containers, as 50-gallon barrels and large tanks.

Paris green is lethal to subsurface-feeding mosquito larvæ. Moist sand is an efficient "sinker" for Paris green; it takes up and retains Paris green. Sand is generally available, and usually it will cost nothing to secure it for this purpose.

From our observations thus far it would appear that the toxicity of the Paris green applied by this method continues for a longer period, especially when used in artificial containers, than has been reported for Paris green when applied with dust to the surface in anti-*Anopheles* work.

In the course of the survey of the salt marsh areas of the South Atlantic and Gulf States being conducted by the United States Public Health Service, it has been found that there are large and important breeding areas where the physical conditions would preclude the possibility of economically destroying breeding by drainage, dyking, hydraulic fill, or other major works. Therefore, these experiments have been carried out as a part of the effort to determine an economical and practicable method of destroying salt marsh mosquito breeding. Now that it has been determined that these subsurface-feeding larvæ are highly susceptible to the toxic action of Paris green, it remains to determine the best methods of applying the mixture to the areas requiring treatment. Investigations along this line are now being made.

PELLAGRA IN THE MISSISSIPPI FLOOD AREA

REPORT OF AN INQUIRY RELATING TO THE PREVALENCE OF PELLAGRA IN THE AREA AFFECTED BY THE OVERFLOW OF THE MISSISSIPPI AND ITS TRIBUTARIES IN TENNESSEE, ARKANSAS, MISSISSIPPI, AND LOUISIANA IN THE SPRING OF 1927 [1]

By JOSEPH GOLDBERGER, *Surgeon*, and EDGAR SYDENSTRICKER, *Statistician*, *United States Public Health Service*

The following report deals with an inquiry relating to pellagra prevalence and conditions related thereto in the area recently overflowed by the Mississippi River and its tributaries in the States of Tennessee, Arkansas, Mississippi, and Louisiana.

In the course of this survey the writers visited Dyersburg and vicinity in Tennessee; Little Rock, Pine Bluff and vicinity, England and vicinity, and Marked Tree and vicinity in Arkansas; Jackson, Greenwood, and Indianola in Mississippi; and New Orleans, Baton Rouge, Alexandria, and Monroe in Louisiana. These localities were visited because of their accessibility and in the belief that at these places information concerning representative samples of the affected area could most satisfactorily be secured. As will appear, the information available frequently related to the respective States as a whole, so that whatever may be stated as to the conditions in the overflow area must not be taken as without applicability to some of the other parts of the States affected.

PELLAGRA PREVALENCE

With respect to pellagra prevalence, an endeavor was made to secure all available pertinent information from the State health departments concerned, from county health officers or directors of health units where there were such, and from practicing physicians in the localities visited. In only one of the four States visited, namely, Mississippi, are there normally anything like complete official morbidity reports of pellagra. In the present instance, however, by reason of the disorganization caused by the overflow, even in that State the morbidity reports for the counties affected by the overflow were very incomplete or altogether lacking, so that such information as could be secured relative to the prevalence of pellagra this year in the overflowed area of Mississippi can not properly be compared with official records for preceding years.

At Dyersburg, Tenn., at a conference called in anticipation of our visit by Dr. E. L. Bishop, commissioner of public health of Tennessee, the director of the health unit of that town and of Dyer County, the county health officers of the neighboring counties Lauderdale and Lake, and several practicing physicians from these

[1] Submitted Aug. 12, 1927.

counties, were interviewed and statements of their experience with pellagra this year as compared with preceding years were secured.

At Little Rock, Ark., conference was had with Dr. C. W. Garrison, State health officer. At Pine Bluff, Ark., the director of the county health unit had canvassed the physicians practicing in his county in anticipation of our visit, and from them had secured statements relative to pellagra incidence in 1927 as compared with preceding years. This information was furnished us and, in addition, in company with one of the physicians having an extensive plantation practice in the vicinity of Pine Bluff, we visited some of his patients at their homes. Through the kind offices of Doctor Garrison, we were enabled to meet the physicians of England, Ark., who took us to see some of their patients on near-by plantations and gave us their opinions regarding the prevalence of the disease in this and preceding years. Similarly, at Marked Tree, Ark., we conferred with several of the physicians practicing there and in the surrounding country, and were shown some of their patients. Here, too, we secured valuable incidence data from a field representative of the National Red Cross, who had canvassed the practicing physicians in this region.

In anticipation of our visit to Mississippi, Dr. F. J. Underwood, executive officer of the Mississippi State Board of Health, had arranged for a conference with the director of the health unit and the local practicing physicians at Greenwood, Miss., and for one with the county health officers of the delta counties at Indianola, Miss. At each of these conferences statements of pellagra incidence were secured from the health officials and practicing physicians.

At New Orleans, Dr. Oscar Dowling, president of the Louisiana State Board of Health, furnished us with what information he had of pellagra morbidity in his State. As pellagra morbidity is but very imperfectly reported in Louisiana, as in nearly all States except Mississippi, the most definite evidence at hand was a statement from the superintendent of the State asylum at Pineville, La., indicating a very definite increase in pellagra admissions for 1927. This institution serves the northern part of the State and thus reflects the conditions obtaining in that portion of the State. In addition, we visited Baton Rouge, where we met the superintendent of the other of the two State asylums for insane, that at Jackson, La., who stated that there had been no appreciable increase in admissions to his institution. This asylum is for patients from the southern parishes of the State, and the incidence found there may thus be considered as an index of conditions in the area served by it. At Alexandria, La., the director of the health unit was consulted with regard to pellagra in that locality. Similarly, at Monroe, La., the director of the health unit and the city and county health officers were visited, and statements were obtained regarding pellagra in that locality.

The information secured from all these sources was, for the most part, of a very general character. As already noted, no satisfactory official morbidity records were available in any of the States. Such information as the local health officers could give was based, with few exceptions, on canvasses of the physicians practicing in their jurisdiction. Very few of the physicians, however, keep their records in such a form as to enable them to make a numerical statement of cases treated. About all they could say was that they were or were not seeing more cases of pellagra, as the case might be, this year than last year, or, in some instances, more cases than they had seen altogether in the preceding period of, say, five or six years. The physicians in one of the localities visited were of the opinion that 25 per cent of the plantation population of that locality was affected with pellagra this year.

In evaluating the available information indicating an increased incidence, some allowance must be made for the effect of the abnormal conditions prevailing which probably tended to bring to the attention of physicians and health workers a larger proportion of existing pellagrins than would normally have been the case.

With all foregoing considerations in mind we submit the following summarized statement as our judgment with respect to pellagra incidence in the areas specified:

Tennessee.—All information obtainable indicates that there has been a notable increase in pellagra incidence in the overflow area of western Tennessee this year. Some evidence was also secured suggesting that there may be an increase of pellagra incidence also in some, at least, of the upland areas of the western counties of Tennessee.

Arkansas.—There is a considerable general increase in pellagra incidence in Arkansas this year as compared with 1926. This increase is particularly marked in the counties affected by the overflow, but these counties constitute the area in which pellagra is normally highly prevalent.

Mississippi.—There is probably an increased general incidence of pellagra in Mississippi this year. There are indications of a very high incidence in the Delta counties. This is normally the case in this State. Some of the information obtained points to a much more marked increase in the overflow than in the upland areas of the Delta counties.

Louisiana.—There is probably some increase of pellagra in Louisiana this year as compared with the corresponding period of 1926, this increase coming apparently principally from the northern portion of the State. No information was secured suggesting the existence of any abnormal incidence in the overflow area.

Notwithstanding the very general character of most of the information obtainable, we are satisfied that in the localities visited in

Tennessee, Arkansas, and Mississippi the incidence of pellagra is abnormally high. The only available objective index of this that seems worthy of presentation was obtained from Doctor Leach, director of the health unit of Sunflower County, at Indianola, Miss. Under Doctor Leach's direction a house-to-house canvass in the vicinity of Indianola was made between June 20 and July 22, 1927, covering an unselected population of 4,179, among whom 102 cases of pellagra were recorded, an incidence rate of approximately 24.4 per 1,000. It is, of course, impossible to state definitely whether the incidence disclosed by this special canvass in Sunflower County is representative of all the delta counties or of the localities in the overflow areas in Tennessee and Arkansas. We are inclined to believe, however, that the incidence of the disease in the delta counties as a whole and in some, at least, of the localities visited in Tennessee and Arkansas, was not notably unlike that disclosed by the sample canvass in Sunflower County. Indeed, we think it possible that in some localities it may have markedly exceeded this rate.

While it is manifestly impossible, on the basis of the available data, to determine the actual pellagra incidence rate in the overflow area of Tennessee, Arkansas, and Mississippi, it may be permissible, on the basis of the results of the sample canvass in Sunflower County, Miss., and in the light of our experience, to suggest that this rate is probably of the order of 10 to 20 per 1,000 of the rural (tenant farm) population of that area. It should be kept clearly in mind, however, that this suggestion is essentially little better than a guess and is offered only in order to convey some concrete idea, however crude, of the magnitude of the problem we are considering.

Another way of visualizing the magnitude of the pellagra problem is to estimate the probable morbidity in the four States Tennessee, Arkansas, Mississippi, and Louisiana on the basis of recorded deaths. The pellagra mortality records are approximately complete and may safely be used for such purposes. They are presented in the accompanying table (Table 1) for each State for the years 1924, 1925, and 1926. As may be seen, there has been a definite and more or less marked tendency to an increase in pellagra in these States during 1925 and 1926 as compared to 1924, the aggregate number of deaths in 1926 being fully 80 per cent larger than in 1924. We believe it conservative to expect that the number of deaths from pellagra during 1927 in these four States will be at least one-fourth to one-third larger than that for 1926. In other words, we think the number of deaths from pellagra that may conservatively be expected to occur during the present year, unless exceptionally potent measures intervene, will be little, if any, under 2,300 to 2,500. The studies of the Public Health Service workers indicate that the case fatality rate of pellagra, when all types of definitely recognizable cases are con-

sidered, does not exceed 5 per cent. On this basis, therefore, it may be expected that fully 45,000 to 50,000 individuals will have suffered a definitely recognizable attack of pellagra within the limits of these four States during 1927. It seems to us probable that about one-half of this number will be in the overflow area.

TABLE 1.—*Number of deaths and estimated number of cases of pellagra in specified States for 1924, 1925, and 1926, and estimated number of deaths and of cases of pellagra for 1927*

State	1924		1925		1926		1927	
	Deaths	Cases [1]	Deaths	Cases [1]	Deaths	Cases [1]	Deaths	Cases [1]
Tennessee	[2] 263		[3] 375		[3] 528			
Arkansas	[3] 161		[3] 313		[3] 491			
Mississippi	[3] 413		[3] 561		[3] 564			
Louisiana	[3] 183		[3] 343		[3] 267			
Totals	1,020	20,000	1,592	32,000	1,850	37,000	2,300-2,500	45,000-50,000

[1] Estimates. See text.
[2] From Mortality Statistics, Bureau of the Census.
[3] Direct from State health departments

The overflow area of Tennessee, Arkansas, and Mississippi is normally an area in which pellagra has been quite prevalent ever since the disease was recognized in 1908 or 1909. Therefore, it seems to us highly probable, particularly in view of the depressed economic conditions in this area, associated with the low price of cotton in 1926, that this area would have suffered an increased incidence even had no overflow taken place. Witness, for example, the well-known exceptionally high incidence of pellagra in 1915 following the depression in cotton values in 1914. However, the overflow (by causing a more than ordinary restriction (1) in the available supply of milk, through a decrease in the number of milch cows—from drowning or sale—and through the lowered milk yield of such cows as remained because of a period of low feeding; (2) in the supply of fresh meat and eggs, through loss of many of the home-owned poultry and swine; and (3) in the supply of fresh vegetables, through destruction of such gardens as were planted before the overflow and delayed planting because of the overflow) very probably accentuated the unfavorable dietary conditions that would have obtained in any event and thus may reasonably be presumed to have contributed to the existing increased prevalence. What portion of the existing increase is properly attributable to the factors resulting from the overflow it is impossible to say.

The lack of evidence of any increase in pellagra prevalence in the overflow area in Louisiana is of considerable interest, but with the meager information at present available it is difficult or impossible to explain. We shall not attempt to do so at this time.

SOME ECONOMIC FACTORS RELATED TO PELLAGRA PREVALENCE

With respect to the economic factors related to the prevalence of pellagra in the area under consideration, we made inquiries of physicians, health officers, tenants, planters, business and professional men, and of farm demonstration agents, county officials, and others in the localities visited. Without attempting to report in detail the statements made and the opinions expressed by the various individuals, the information so obtained is summarized in the following paragraphs:

1. The prevalence of pellagra at any given time in the lower Mississippi River area is involved in three sets of conditions, namely:

(*a*) The dietary habits of the inhabitants.

(*b*) The tenant farm system of cotton production, cotton being the chief crop throughout the lowlands along the lower Mississippi and tributary rivers.

(*c*) The availability of supplies of various foods which, in turn, is influenced by the one-crop type of agriculture, with the consequent lack of diversification, and by the dietary habits of the people.

2. Given certain dietary habits and conditions, the variants in the conditions affecting pellagra prevalence are essentially economic in their character. In the past 12 years, when records of morbidity and mortality from the disease have become available, it has been plainly evident that an unprofitable year in cotton production in this area is followed by an increase in incidence and mortality, and, conversely, that an improvement in the economic situation is followed by a diminished prevalence.

3. In the present situation the outstanding fact, aside from the deprivation directly due to the recent overflow, is that the economic condition of the entire cotton-producing area is unfavorable. This is due principally, if not altogether, to the unprofitable cotton crops of 1925 and 1926. The financial resources of the cotton planters thus were already severely strained before 1927, and the economic status of the tenant population was already considerably below that of 1922 and 1923. The destruction of, or impossibility of planting, crops in certain sections and the serious delays in planting in other areas, resulting in only 25 per cent to 40 per cent of normal production, due to the overflow, undoubtedly has intensified a condition that already was distinctly unfavorable.

4. It was obviously impossible, in a rapid survey, to obtain anything more than the broad outlines of the situation. These, however, seem to be perfectly clear and not only were plain to anyone with an elementary understanding of the conditions ordinarily prevailing and those developing by reason of the flood, but were universally corroborated by all the evidence obtainable from those who were conversant

with the situation. An estimate of the magnitude pellagra incidence will have attained by the end of 1927 has already been submitted. A forecast of what proportions pellagra will attain in prevalence during 1928 is extremely difficult or impossible to make, for the reason that it is so bound up with the economic factors already referred to. If the price of cotton continues to be relatively high, as present indications seem to promise, the financial condition of the planters obviously will be more favorable both for the remaining portion of the present year and for the ensuing year; but it must be remembered that since cotton is a highly speculative commodity, its price is subject to many indeterminable factors. Assuming, however, that the price of cotton will be favorable to the planters in 1927, those planters and the tenant population in the areas affected by the overflow obviously can not benefit to any great extent from this favorable price, because of the fact that, in general, they will have little or no cotton to sell except such as was carried over from the high production year of 1926. All that it seems permissible to say is that since it has been observed that in the past an unfavorable cotton year is followed by an increased incidence of pellagra, we may expect a high and possibly an increased prevalence in 1928 as compared with 1927, unless some important mitigating factor or factors intervene.

In order to clarify the foregoing summary, a brief statement may be made on the relation of economic conditions and of dietary habits and availability of food supplies to prevalence of pellagra in this cotton-growing area. The statement is based on information from the sources already mentioned in the light of the results of previous studies of the Public Health Service, and is expressed in general terms without attempting to include statistics, illustrations, or details. The particular economic factors involved which may be emphasized are the dietary habits of the rural population, the availability of food supplies, the prevailing practices of financing cotton production in this area, and the system of tenant farming.

The dietary habits of the tenants, in fact, of the population as a whole in this area, play an extremely important part, we believe, in the endemic prevalence of pellagra. The expression is common that the tenant families, both white and colored, subsist on the three "m's"—meat, meal, and molasses. The meat is salt pork, which includes very little lean; the meal is corn meal; the molasses is the sorghum, or cane. To these should be added wheat flour, used to some extent to supplement the corn meal, some rice, and dried beans. The customary ration supplied to tenants from stores and commissaries, whenever rations are prescribed, consists of these articles of food, and the tenant farmer, whether white or negro, universally regards them as his staple diet. In this connection it may be

remarked, as will be pointed out somewhat more fully later, that this makes a typical pellagra-producing diet.

It is important to bear in mind that the poorer the economic condition of the tenant, the more nearly exclusively will he tend to rely upon these articles of food for his diet. Thus, the factors that influence his ability to purchase or otherwise provide certain other necessary supplementary foods become factors that influence the prevalence of pellagra, and thus the incidence of the disease rises or falls in inverse association with them.

Supplementary to this staple or basic diet, a rather limited variety of foodstuffs is ordinarily available. These may be classified, for convenience of discussion, as home-produced, purchased, and wild.

The home-produced supplementary foods are milk (used almost altogether in the form of buttermilk), butter, poultry, and eggs, and a limited variety of vegetables, chiefly cabbage, collards, beans, peas, corn, okra, and tomatoes. To these may be added fresh pork. At first glance these constitute a rather impressive supply and diversity of foods, but as a matter of fact the diversity and quantity are not large. As to milk and butter supplies, our observation and the information obtained from farm demonstration agents and others lead us to estimate that, in ordinary times, only 30 to 40 per cent of the tenants own cows. The reasons for this lie partly in the fact that the tenants are too poor to purchase cows, partly in the fact that facilities for pasturage and feed are frequently not afforded by the plantation owners, and partly by the improvidence of the tenants themselves. The policy of some of the planters is responsible in some measure for the absence of cows for two reasons: (1) Because of the desire to use all the land for cotton, pasturage is not furnished and cows are then usually staked along the roadside during the cotton-growing season; and (2) because, as it is claimed by some planters, the tenants are prone to divert feed destined for mules and horses to feeding their cows. It may be observed also that seasonal variation in the ownership of cows as well as in milk production apparently takes place. Since the tenant farmer is usually at his lowest economic ebb during the late winter and early spring, he is sometimes forced to sell his cow for cash, especially when the purchase of feed becomes necessary. This tends to lessen somewhat the number of families owning cows at this season of the year. The supply of milk from the cows which are retained varies somewhat according to season, the supply being lowest in the winter and early spring, because of the scantiness of forage and feed.

While poultry is owned by 60 to 70 per cent of the tenants, the number of such poultry owned by a tenant is usually very small; the egg production is almost negligible and at best will not furnish more than a very occasional meal. Vegetable (garden) produce

ordinarily is extremely limited in quantity. A well-informed farm demonstration agent in one of the counties gave us his observation that less than 2 per cent of the tenant population have gardens in the ordinary sense of the word and our own observation confirms the statement. Probably about 25 per cent have some form of garden, but most of these gardens contain usually only a few cabbages or collards, occasionally a few peas and beans, and still more rarely some tomatoes. The planting of gardens is not generally encouraged by the plantation owners for two reasons: (1) The fact that the gardens use space which otherwise might be planted in cotton; and (2) the making and maintenance of gardens entail labor on the part of the tenant and his family during the season when all the labor possible is required in the cotton fields. The result is that, although in the late winter or early spring, gardens may be planted, the opportunity for working them is lost later on at the time when cultivation is most necessary, so that the garden rarely contributes anything of importance to the food supply of the family. There seems to be a more or less general feeling among local observers that the scarcity of gardens is also due partly to the lack of energy and thrift on the part of tenants, partly to the fact that they are not in the habit of raising gardens, and partly to their ignorance of how to cultivate them. Probably other reasons may be suggested in the facts that the soil is not always well adapted for small garden cultivation and that the tenant farmer after he has finished his day's work in the field is without the needed energy to attempt to cultivate a garden entirely by hand. The ownership of swine is even more restricted than that of cows, and the fresh-meat supply from this source in the autumn and winter lasts but a comparatively short time.

A second source of supplementary food supply is wild vegetation and game. In the early spring a certain amount of greens of different varieties is to be had for the picking, and it is our information that they are used to a considerable extent at that season of the year. Fish are available at all seasons of the year to those who live near the streams or lakes, but here again it should be borne in mind that fishing is done only in those seasons and at times when work is not required in the fields. To a very limited extent wild game is available, especially during the autumn and winter.

A third source of supplementary foods, such as canned meats and, to a very limited extent, vegetables, such as potatoes, cabbage, and tomatoes, is available in the commissaries and stores. The favorite canned goods are salmon, corn, and tomatoes. Obviously, the availability of these foods to the tenant depends upon his ability to buy. In years when his income or credit from his crop is "good," he does not hesitate to purchase considerable quantities and a fair variety of all the articles of diet that the store supplies. In fact, he may be encour-

aged to do so by the plantation commissaries and other stores. In times of economic depression he is not only forced on his own account to limit his purchases of these kinds of food, but he is discouraged from purchasing by the merchant or storekeeper in order to keep him from getting too deeply into debt.

The method of financing cotton production bears an indirect but a definite and important relation to the economic status of the tenant class. In the first place, it must be kept in mind that while all agricultural production is more or less speculative, the speculative character of cotton production is even more pronounced than that of most other forms of agriculture, for three reasons: (1) Cotton in the section under consideration is almost the sole crop, and the chances of severe loss or considerable success to the entrepreneur fluctuates to a greater extent than in a section where the crops are diversified; (2) the product is a highly speculative one in that it is sold in a market which is very sensitive to many factors; (3) a considerable proportion of cotton planters apparently regard cotton production as a speculative activity rather than a regular or settled business.

From the point of view of the economic status of the tenant population, cotton plantations may be roughly divided into at least three types:

(1) There is the small, or relatively small, farm or plantation, chiefly in the "uplands," on which cotton is only one of the crops. This farm is usually owned by the resident planter or farmer. He may have a few acres in cotton, the other acreage being in hay, corn, possibly other grains, truck, and fruits. This type is not characteristic of the "delta" section, and it may be remarked that our information is to the effect that relatively little pellagra is incident in the section characterized by this diversification of crops. This is borne out by the peculiar distribution of the disease in Mississippi. The average yearly number of deaths for the three-year period 1924–1926 in that State was 513. Of this number, 280 deaths (a death rate of 38 per 100,000) occurred in the 17 counties [1] ordinarily considered as constituting the delta section, and 233 (or a death rate of 18 per 100,000) in the remainder of the State. In other words, the pellagra incidence (as indicated by the death rate) in Mississippi outside of the Delta section was only about one-half that in the delta.

(2) The large plantation, owned either by an individual or by a corporation, ranging from two or three thousand acres to 30,000 acres or more. These plantations may be again classified into two subgroups: (*a*) Those owned and operated by resident planters, and (*b*) those operated by nonresident planters or corporations. Our

[1] These are as follows: Bolivar, Coahoma, De Soto, Holmes, Humphreys, Issaquena, Leflore, Panola, Quitman, Sharkey, Sunflower, Tallahatchie, Tate, Tunica, Warren, Washington, and Yazoo.

information is to the effect that the tenants, on the whole, are usually better off economically here than on the small plantations of a type to be referred to later. The management of a plantation owned by a large corporation is usually more efficient. The resident owner is likely to devote his time and personal attention to the welfare of his plantation, and our information is that his tenants are likely to be composed of the more stable and efficient class. It is on these plantations, for example, that apparently the tenants are better equipped as to houses, gardens, and livestock, including cows.

(3) The plantations or tracts of land which are bought as a speculation by persons engaged in other business. A plantation is usually bought upon the payment of only a portion of the purchase price, a mortgage being carried for the remaining amount by a local bank, insurance company, or credit organization. The owner then obtains a supply of tenants and their families on the best terms possible and often secures a mortgage on his crop, although this is not in all cases necessary if he has sufficient working capital. If one or two unfavorable years are experienced, a speculative venture of this sort not infrequently comes to grief. For example, in 1926, when the cost of cotton production was some 2½ cents a pound higher than the average market price of cotton, the credit of such operators was severely strained, especially in view of the fact that they had not had a very successful year in 1925. The great deflation in land values is a further complicating factor in the present situation, bearing especially upon speculative ventures of this kind. Many of those individuals and companies that embarked upon cotton production in a speculative way without sufficient capital to weather unfavorable conditions were caught, and in a number of instances have been unable to meet the interest on their mortgages. In 1926 and 1927 the mortgage holders, in some instances, have attempted to operate these plantations themselves; in other instances the land has lain idle; in still others the mortgages have been reduced and the owner has been allowed to continue.

Now, the precise effects of these conditions upon tenant farmers are difficult to set forth in detail because of so many complicating factors that render the situation an extremely intricate one. But the major effect seems to be fairly clear, namely, that all planters, but particularly those who did not have and who do not now have adequate financial resources in the face of two or three years of unfavorable conditions, and in the face of such a catastrophe as the flood, are compelled to operate at the very least possible cost. This may be translated, according to our information, into a limitation of cash and credit advances to the tenant to the very least possible amount that can be arranged for. We have learned of some instances in which the amount of credit was cut from the usual $1 and $1.25 per acre per

month to $0.75 and even $0.50. This condition bears most heavily upon the least fortunate class of tenants, for various reasons. In the first place, the tenants who contract with planters of this kind tend to be of the less efficient and more shiftless type; they are largely the "moving" population of the cotton-growing area who have very few possessions, tend to be improvident, and perhaps invite less consideration from the planters themselves. Moreover, this type of plantation is not always operated by the most efficient managers, and these, in their turn, are likely to be rated more according to the cotton production per acre in the present rather than upon their ability to develop the future productivity of the land and the labor supply. It is perhaps not going too far to say that in so far as any lack of personal attention to the welfare of the tenants exists on the part of the manager or the planter, it is to be found on these plantations where the owner is nonresident.

This does not mean, however, that the pressure of unfavorable conditions in "poor" years is felt by plantations of this type only. We were informed of a number of instances of failures, in 1926 and 1927, of plantations owned and operated by large companies, and many of the smaller resident-owner plantations were severely hit by the succession of unprofitable years and the flood. The effect upon the tenant in all cases is much the same, except for the fact that the planter without considerable financial resources is obviously less able to "carry" his tenants without passing on to them some of the pressure to which he himself is subjected.

The economic status of the tenant may be understood more clearly if the system of share farming prevalent in the cotton-growing area of the Mississippi Valley be described briefly. Generally speaking, the system is similar throughout this area. The plantation owner enters into a contract about the first of the year with the tenant to plant, cultivate, and harvest cotton on a certain number of acres of land, varying from 15 to 40, the number of acres depending upon the richness and condition of the soil, its freedom from stumps, etc., and the number of individuals in the tenant's family who are capable of furnishing labor. Perhaps a fair average would be between 25 and 35 acres. The size of the tenant's share of the crop depends largely on whether or not mules or horses, implements, and seed are furnished by the plantation owner. The value of his crop obviously depends upon the production of the particular acreage and upon the price of cotton and cottonseed at the end of the season. The method by which the tenant is financed, since he is almost always without any ready funds and frequently already in debt, may be illustrated by the method obtaining in the Delta section of the State of Mississippi, outlined below.

At Christmas the tenant receives what is generally known as "Christmas money," the amount ranging from $25 to $100, depending in large measure upon his efficiency, his indebtedness at the time, the prospects for a cotton crop, etc. This is paid to him in cash, and our information is that it is usually largely spent during the Christmas season. From about the first of the year until March 1 the only cash income which the tenant has is from odd jobs which he may be able to secure in lumbering, mending houses and barns, work on the roads and levees, etc. On the money thus earned, together with what he may have saved from the previous year's crop and the "Christmas money," the family must subsist until the crop season begins.

On March 1 the usual arrangement entered into is for the planter to make monthly advances in cash to the tenant of $1 to $1.25 per acre farmed. This ranges from $15 to $40 per month, averaging $25 or $30. During the period from March 1 to August 1 his family prepare the ground and plant and cultivate the cotton. The only other source of cash income during this period is from hoeing cotton for wages on other tracts of land, this being done chiefly by the women and the older children. The cash advances by the planter are made over a five-month period, beginning March 1, the last payment being made on July 1. After July 1 no further cash income is available until the crop is picked and ginned, except from very occasional odd jobs and from picking cotton on other tracts of land by members of the family capable of work. When the cotton is ginned in the fall, the tenant receives income from two sources: One is from the sale of cotton lint after the deduction of the cash advances made by the planter; the other is from the sale of the seed, all the money from the latter going to the tenant.

The money from the crop is the chief income of the family. Obviously, if the crop is of fair quantity and quality, the amount of income will depend upon the price of cotton at the time the cotton is sold. If conditions are unfavorable, as, for example, in a year when cotton prices are low (as in 1926), or when unfavorable growing conditions exist, as they did in certain areas in 1925 when heavy rains interfered with the quality and quantity of cotton, the tenant does not realize any great advantage from his crop. For the lint he may be, and in many instances actually is, in debt to the planter; the price of cottonseed, of course, varies closely with the price of cotton. In a "good" year the tenant tends to extravagance, to purchase beyond the limits of absolute need such things as clothing and cheap automobiles, and it is a very general observation that the negroes and most of the white tenants in this section are rarely in possession of any surplus by the end of the year.

The method of cash advances to the tenant on his crop prevails generally throughout the Delta section of Mississippi. It may be

noted that this system marks a quite distinct change from that prevailing 10 years ago, when, instead of advances on the crop being made in cash, the advances were in the form of credit on the planter's commissary or store, or other stores when the planter himself did not operate one. The reason for this change, as stated by various planters and others, was that the scarcity of labor resulting from an exodus of negroes since 1920 forced this change to conciliate and conserve the labor supply, the system of credit advances being objected to by the tenant and the cash advances preferred. The effect of this change has been a greater freedom on the part of the tenant to buy where and what he pleases, and a greater consumption of supplementary foods, automobiles, clothing, etc., in "good" years. Another possible effect is a tendency toward a restriction in the variety of diet on the part of some (improvident) tenants for the reason that too large a portion of the available money was spent for other (luxury) purposes than food.

While the system outlined above prevails generally throughout the Mississippi lowlands, certain variations are to be found. Thus, in Tennessee the older form of store credits instead of cash advances is prevalent. In Arkansas it was found that both of these systems existed, the tendency being toward a greater following of the practice of cash advances. Among the white tenants in Tennessee and Arkansas still another variation in method of financing the crop is to be found, whereby the tenant receives no cash advance or credit from the planter but mortgages his own crop to the commissary or store for supplies during the crop season.

Whatever particular form of this system prevails, the effect upon the economic status of the tenant farmer is practically the same. For the most part, except in unusually favorable years, the tenant is constantly in debt, or on the verge of debt, to the planter or the store. If he chooses to move, to change the plantation owner with whom he has a contract, care is taken by the next owner to ascertain how much the tenant is in debt to his former planter so that the new planter may take up this indebtedness for his new tenant.

The average tenant may thus be said to be chronically on the verge of deprivation, it being understood, of course, that some tenants never reach that border line, and that others are almost continuously under it. Even within the relatively narrow range of income in which all of these tenants must be classified by any ordinary standard, there are quite distinct gradations. The less energetic, less capable, and less efficient, "shiftless" class find themselves on or below the border line. Obviously, only a relatively small decrease in income is sufficient to force a considerable number of tenants who are on the border line into the class which actually suffers deprivation. This was true in 1915, again in 1921, and again in 1924 and 1926.

Now, the precise manner in which an unfavorable condition operates upon the tenant differs to some extent according to the individuals concerned, but in general it is somewhat as follows: If for any reason the tenant clears little, if anything, from his crop, the amount of his "seed money" is also limited, and he is thus at a distinct disadvantage during the winter and the following spring until, at least, a new crop is financed. If he is unable, for various reasons, to secure or to do other work, as has been described, he has no additional source of income. It may, therefore, happen that the tenant is so pressed during this period that if he owns a cow he is compelled to dispose of it, and to the extent that he thus deprives his family of milk he impoverishes the household diet. Furthermore, it is during this period that the annual movement of tenants occurs. Some, hoping to be more fortunate the following year, seek other plantations; some, disheartened by a bad year, may leave the section and either go to other cotton-growing areas in the lowlands or go to the uplands and the "hill country," leaving their debts behind them. On the other hand, after a favorable crop the proportion of such unfortunate tenants is reduced, although from every indication there is always a considerable proportion of tenants in this class.

In the present instance three unfavorable years have occurred, during the last of which (1926) the price of cotton fell on the average below the cost of production. The 1927 flood, obviously, has tended to intensify the severity of the resulting conditions, and it is reasonable to conclude that a larger proportion of tenants are this summer in a definitely unfavorable situation than has been the case for a number of years. This conclusion logically follows from the factual premises, but it may be remarked that throughout the flood area the information obtained was without exception corroborative of the accuracy of this inference.

The evidence of an unusually high incidence of pellagra this summer in the area under consideration is thus associated with factors of an economic character, the gravity of which has been accentuated by the overflow.

RECOMMENDATIONS

We may now turn to a consideration of practicable measures that may be applied in order (1) to mitigate or relieve the existing acute health situation, and (2) to influence the fundamental conditions responsible for that situation, with a view of minimizing their probable future effects.

In order to make clear the scientific basis for the recommendations which we shall presently outline for assisting those attacked with pellagra to regain their health, it seems desirable first of all to outline briefly the essentials of our knowledge of the cause and treatment of pellagra.

Broadly speaking, pellagra results from a deficiency in the diet of a specific pellagra-preventive dietary essential or vitamin which has been designated as factor, or vitamin, "P–P." In other words, it may be said that pellagra develops in those whose diet does not include enough of the foods which carry the vitamin "P–P" to supply the body's needs for this factor. This does not mean that the diet that leads to pellagra is entirely devoid of this essential factor; on the contrary, it is probable that a pellagra-producing diet practically always contains some of this vitamin, but the quantity is not enough for the nutritional needs of some or all of those subsisting on it.

The diet made up of the ingredients specified below in conventional quantities has been found associated with pellagra and, it is believed, will lead to the development of the disease in fully 40 or 50 per cent of those partaking of it within some three to six or eight months, *depending on the nutritional status of the individual when starting such diet.*

The components of a typical pellagra-producing diet may be the following: Corn meal (corn bread, boiled hominy, or mush), white wheat flour (biscuit), white rice, dried beans, "white meat" (salt pork), sorghum, or cane molasses, collards, or "greens." Such diet contains some vitamin "P–P" derived from the beans, collards, and corn meal, but too little to prevent pellagra. An increase in the ration of beans and collards or, better, the addition of some food or foods rich in this factor, would tend to diminish the incidence or altogether prevent the occurrence of the disease in those subsisting on this diet. In this connection it may be remarked that the diet made up as above specified is accurately representative of the main or basic portion (calorifically) of the diet of the rural population of the South, and, because of the three principal components, meal, meat, and molasses, to which in hard times it tends to be reduced, is designated in the vernacular as the "three m's" ration.

As has been remarked, when this diet is adequately supplemented with "P–P"-containing foods (such as milk, lean meat, and vegetables) pellagra does not occur. When the disease does appear, it is certain that, for some reason, the diet has not been adequately supplemented. This reason may be any one or some combination of the following: (1) Individual eccentricity of taste, especially where the variety of supplemental foods, and thus of choice, is restricted (exemplified by those who have a dislike for milk, for eggs, for fresh beef, etc.). (2) A shortage in supply of the supplemental "P–P"-containing foods, resulting, perhaps, from inaccessibility to markets, difficulties of transportation, particularly of the perishable foods, epizootic among the domestic animals (milch cows, poultry, swine); from fencing laws, which make it impracticable for many to keep milch cows or swine; from overflows, which may cause the drowning

of milch cows, goats, poultry, or swine, or force the sale of such animals or, by leading to a shortage of stock feed, cause a reduced milk supply. (3) Insufficient cash or credit available for the purchase of an adequate diet.

Recent investigations having shown that the so-called vitamin B actually includes at least two distinct dietary essentials, namely, the antineuritic vitamin and the "P–P" factor, it has been inferred that all foods that are known to contain this so-called vitamin B contain the "P–P" factor. This inference has been borne out by the results of such tests of individual foods as have so far been made. It appears, however, that the different classes of foods, and, probably also, the foods of the different classes, vary considerably with respect to their richness in this "P–P" factor. This is of great practical importance, since it emphasizes the importance of quantity. Unfortunately, our knowledge of the quantity of factor "P–P" contained in the individual foods is extremely limited and, at best, of a very crude relative character, so that only a few very general statements can at present be made. Thus, when forming the principal supplemental source of factor "P–P" in connection with such basic diet as has been considered in the foregoing, there would be needed daily for fully preventive purposes in the adult, of lean beef (Hamburg steak) about (not over) one-half pound, of dried cowpeas fully one-half pound, of buttermilk about 1 quart, of canned tomatoes about 1 quart, of dried pure yeast about 1 ounce. If a combination of these or related foods is used, the quantities of each may or should, of course, be correspondingly reduced.

The foods that have preventive action have, of course, also curative value. In selecting the food or foods to be used in treating the sick, the physician must of necessity choose such as will most satisfactorily fit the tastes and digestive capacity of the patient. Such considerations and actual experience indicate that milk, fresh meat, eggs, and dried yeast are the foods of first choice. Uufortunately, it is frequently very difficult for the pellagrin to secure these foods, by reason of lack of means with which to purchase or because of a scant available local supply. As a consequence the patient all too frequently receives too little of the foods of which he is in greatest need, so that the course and progress of the attack are either altogether unfavorable, especially in the severe cases, or disappointingly tedious. This and other considerations which can not here be discussed quite commonly tend to make the physician cling to the older ideas of drug treatment. There is no drug known that actually serves any useful purpose, unless it be to mitigate or relieve painful or disturbing symptoms or as a placebo. Almost always the money expended on drugs would be much more advantageously expended on the essential foods and the proper feeding of the patient.

With the foregoing elementary considerations relative to the cause and treatment of pellagra in mind, and in view of the difficult economic situation of nearly all pellagrins, we would recommend that the appropriate local relief agency or agencies furnish the local health officer with a supply of such nonperishable supplemental "P–P" rich foods, as dried pure yeast (preferably the killed culture), canned (chum) salmon, canned beef, and canned tomatoes, or adequate funds or credit with which to purchase such a supply, which he may then distribute on physicians' requisition or otherwise to those in need who are actually sick or present evidence of an impending attack of the disease. Since the vast majority of patients are able to be up, the question of hospitalization will arise only in a relatively small minority. In general, patients properly fed will regain their health and normal vigor in from 6 to 12 weeks. In the foregoing it is assumed that the patient has a sufficient supply of the basic staple foods.

It is believed that if the foregoing recommendation is promptly inaugurated and efficiently carried out, the acute pellagra situation will be mitigated if not altogether relieved. It must be noted, however, that this is not to be understood as solving the fundamental problem of pellagra. The solution of this, and thus the prevention of a recurrence of the disease next year and in the future, involves economic questions—income and food supply—the nature and complexity of which have already been outlined and which must be dealt with in other ways.

In any project or effort for the amelioration of conditions that are directly or indirectly responsible for the prevalence of pellagra among the agricultural tenant population of the cotton-growing area along the Mississippi and its tributaries, it is necessary to keep in mind two considerations of essential importance. The first is that the economic status of this population is bound up in the tenant system, which, in turn, is involved in single-crop agricultural production and the speculative character of agricultural finance as it is practiced in this area, the seasonal fluctuation in income of the tenant, the periodic or cyclical variation in profits, and other factors of an economic nature. The second consideration is that the dietary habits of the population in this section of the country are aggravated, if the term may be so used, by the peculiar limitations upon the supplies of foods, particularly foods of certain kinds, to which reference already has been made.

Thus it may appear at first glance that any attempt to remove the conditions which are fundamentally responsible for the prevalence of pellagra would involve a revolution of dietary habits and of the entire economic and financial system as it now exists. We are led, however, by our observations to believe that, regardless of changes

that may be brought about or that may take place in these conditions, there seem to us to be some more direct and more immediately practicable approaches to the fundamental problem of pellagra which would be more specific in their effects.

We are fully aware that the extensive and valuable activities of the Federal Department of Agriculture and of the State agricultural colleges and other agencies have been directed along at least some of the general lines which are suggested below; and our suggestions should not be taken as in any way implying that these activities are not fully commensurate with the demands of the situation. Since the aspect of the situation which conserns us here is primarily the public-health aspect, of which pellagra is only one index, we wish to invite consideration in a general way of certain measures which are either already under way or may, it seems to us, be undertaken for the improvement of specific conditions which are concerned more directly with the situation as a public-health problem.

In the first place, obviously any measure which will improve the economic condition of the tenant farm population, particularly of that portion of it which is liable to deprivation, will tend to lessen the prevalence of pellagra as well as of ill-health from most other causes. The stabilization of income of the tenant in such a way as to lessen the effect of seasonal and periodic limitations arising in part from the inability of the tenant at certain times to purchase such of those foods which are available would probably tend to operate in that way. It is generally recognized, we believe, that the diversification of agriculture in this area would be a measure for the stabilization of income, since the tenant's income would not then be so greatly subject to fluctuations as it is in the production and value of a single crop.

In the second place, there may be mentioned more specifically those efforts which do or may make food supplies available generally throughout the tenant population area and with less seasonal variation. Obviously, efforts looking toward crop diversification will have a direct bearing upon this objective, especially if the diversification includes truck, dairy, and cattle production. All efforts that will result in a greater increase in the milk supply may be regarded as definitely pellagra-preventive measures as well as measures for the improvement of health in general. From such information as has been furnished us in the areas concerned it is believed that a more general ownership of cows by the tenants themsleves can be effected. Another suggestion which may be and has been made is for the establishment of plantation dairies operated by plantation owners or managers, the milk to be sold at a minimum price and to be included in the ordinary rations bought from the store or commissary. Another suggestion along this line is that of community dairies. In a similar way the

efforts being made, by the Department of Agriculture and persons interested, toward more and better gardens among the tenants is a measure of great importance. It is believed that some practicable way can be found of providing for more convenient methods of the cultivation of gardens, such as the planting of garden produce in rows in the cotton fields themselves or the inauguration of plantation truck patches. In the latter case the produce may be sold, as in the case of the suggestion relating to milk, as are other goods in the plantation store or commissary. Again, an increase in cattle, swine, and poultry production, at least to the extent that will meet the local demand for fresh meat and eggs, is a matter which would have to be worked out in various ways to conform to local conditions. In short, the practicability and the economic and health advantage of promoting an increase in the production of food on the farm or plantation should be given the most earnest consideration.

The situation is manifestly one which calls for study with a view to working out practicable solutions of the economic and agricultural problems involved. In such study, however, the needs of health must be held in mind as of controlling importance.

COURT DECISION RELATING TO PUBLIC HEALTH

Recovery for damage to residence property caused by sewage-disposal plant.—(Washington Supreme Court; Southworth et ux. *v.* City of Seattle, 259 P. 26; decided September 1, 1927.) An action was brought, under section 16 of article 1 of the State constitution, against the city of Seattle to recover for damages to plaintiffs' residence property by reason of the construction and operation immediately near their property of a sewage-disposal plant. Section 16 of article 1 of the State constitution provided in part:

> * * * No private property shall be taken or damaged for public or private use without just compensation having been first made, or paid into court for the owner, * * *.

A jury returned a verdict for the plaintiffs for more than one-third of the value of the property without the nuisance, and the judgment on the verdict was affirmed by the supreme court.

One contention on behalf of the city was that there was no allegation or proof of filing a claim for damages with the city as a prerequisite to maintaining the action, but the court held that, the action being brought under the section of the constitution above mentioned, the filing of a claim before suit or at all was not necessary.

Another contention on the part of the city was that, as the city was engaged in a lawful and necessary governmental work on its own premises, the claim of the plaintiffs was damnum absque injuria, but the court stated that its decisions and others were to the contrary.

The court also upheld an instruction to the jury that "in determining the question of whether or not respondents' property had been damaged within the purview of the constitutional provision they could take into consideration those things clearly defined by the statute [relating to nuisances] which under all authorities constitute damage."

CASES OF POLIOMYELITIS REPORTED BY STATES FOR FIRST THREE WEEKS OF OCTOBER, 1925, 1926, AND 1927

The following table is a continuation of the table appearing in the Public Health Reports, October 7, 1927, page 2452, and also gives a comparison of the telegraphic reports for the first three weeks of October of the years 1925, 1926, and 1927:

Cases of poliomyelitis reported by State health officers October 2–22, 1927, compared with reports for the corresponding weeks of 1925 and 1926

State	Week ended—								
	Oct. 8, 1927	Oct. 9, 1926	Oct. 10, 1925	Oct. 15, 1927	Oct. 16, 1926	Oct. 17, 1925	Oct. 22, 1927	Oct. 23, 1926	Oct. 24, 1925
Alabama	0	0	2	0	3	1	2	1	2
Arizona	5	0	0	6	0	1	4	0	0
Arkansas	1	1	0	13	2	1	2	2	0
California	36	3	17	26	3	10	32	6	9
Colorado	4	0	1	11	1	2	7	0	0
Connecticut	13	1	1	8	2	0	9	1	1
Delaware	0	2	0	0	0	0	0	0	0
District of Columbia	1	0	3	2	0	1	3	0	0
Florida	1	0	3	0	0	4	0	0	1
Georgia	10	0	0	0	0	1	1	0	2
Idaho	1	0	-------	0	0	-------	0	0	0
Illinois	40	7	12	26	6	16	37	5	15
Indiana	9	3	1	13	3	7	11	2	2
Iowa	12	0	19	5	0	13	-------	0	9
Kansas	15	4	5	26	5	5	8	0	5
Louisiana	0	0	1	1	0	0	2	0	0
Maine	13	-------	1	12	0	0	13	1	0
Maryland	1	2	4	2	1	2	2	2	19
Massachusetts	115	6	12	78	3	5	99	9	10
Michigan	30	0	0	21	0	0	18	0	0
Minnesota	12	3	45	5	2	23	8	0	17
Mississippi	2	0	0	0	0	0	2	2	0
Missouri	18	2	6	20	1	5	9	1	2
Montana	2	3	0	2	0	2	2	0	3
Nebraska	10	0	6	13	0	11	5	0	16
New Jersey	14	1	3	9	1	3	11	8	3
New Mexico	13	0	1	15	0	0	7	0	0
New York	59	37	40	38	20	32	32	23	28
North Carolina	1	6	4	0	5	1	1	2	1
North Dakota	-------	2	12	1	0	3	-------	0	3
Ohio	76	-------	-------	77	-------	-------	46	-------	-------
Oklahoma	10	1	4	13	2	1	10	1	1
Oregon	18	3	1	19	1	0	31	1	0
Pennsylvania	29	3	-------	33	12	-------	45	9	-------
Rhode Island	8	-------	-------	2	-------	-------	3	2	-------
South Carolina	2	4	-------	3	7	-------	3	3	3
South Dakota	8	1	-------	2	0	7	5	0	2
Tennessee	3	1	-------	3	0	-------	7	0	-------
Texas	15	0	0	10	0	0	9	0	1
Utah	4	0	-------	2	0	-------	0	0	1
Vermont	4	1	3	1	0	5	7	0	5
Virginia	1	1	0	3	0	1	0	0	1
Washington	15	0	5	33	1	8	22	0	7
West Virginia	17	0	0	14	0	0	17	0	0
Wisconsin	12	0	22	12	3	14	8	5	7
Wyoming	1	0	0	8	1	1	1	0	0

PUBLIC HEALTH ENGINEERING ABSTRACTS

Report on the activities of the Central Committee on Water Supply of Holland for 1925. Anon. *Verslagen En Mededeelingen Betreffende De Volksgezondheid*, No. 7, July, 1926, pp. 643–648. (Abstract by Frank Hannan.)

The principal activities were: (*a*) To report upon a proposal of the director of the government water supply bureau concerning legal regulations affecting water supplies; (*b*) to report upon the draft, received from the Minister of Labor, Trade, and Industry, of a bill to regulate the withdrawal of ground water and protect sources of supplies; (*c*) inspection of progress on the Ijmuiden sluice project; consideration of the director's report on the effects of the heavy pumpage necessary to avoid under-water construction upon water table, vegetation, and equilibrium between fresh and salt water. Results proved to be in accordance with anticipation, and there appears to be no objection to completing the construction under the same conditions; (*d*) two subcommittees have under consideration the goiter-drinking-water question.

Abbreviated Report of the Government (Holland) Water Supply Bureau for 1925. Anon. *Verslagen En Mededeelingen Betreffende De Volksgezondheid*, No. 7, July, 1926, pp. 649–723. (Abstract by Frank Hannan.)

A short account of the rural supply projects inaugurated and in course of inauguration under the bureau's auspices, outlining the many and various difficulties with which such undertakings have to contend. The manifold functions of the bureau include, for example, technical advice on such matters as deferrization and demanganization. The Government is keenly alive to the desirability of providing reliable water for the rural population as well as for the urban. In more prosperous times it even participated financially in certain approved projects and even now is prepared to assume in some cases a certain contingent liability. Upon the bureau rests the responsibility of seeing that these rural supply projects are established upon the soundest possible basis, both technically and financially. Activities to this end are summarized under 93 headings. Perhaps the greatest difficulty to be surmounted is that of popularizing the idea of paying for water among the thrifty and independent Dutch. Some of the propaganda work is described. In an appendix, Engineer Markus of the bureau lists for 94 Dutch waters the hardness as deduced by the application of certain formulae from the electrical conductivity and the hardness as found by analysis. Agreement is moderately satisfactory.

The Water Supply of Maastricht. A. H. van de Velde. *Verslagen En Mededeelingen Betreffende De Volksgezondheid*, No. 7, July, 1926, pp. 828–834. (Abstract by Frank Hannan.)

The circumstances leading up to the adoption of the new supply in use since November, 1925, and officially taken over in April, 1926, are reviewed. In February, 1923, the former supply was found to be contaminated. An investigation by the central laboratory confirmed the unfavorable results, water in the wells and also from the tap being *B. coli* positive in 10-c. c. samples. The wells were in gravel beds 12–14 meters deep; yet apparently subject at high water stages to pollution from the Maas River. Their situation, too, in a partly agricultural village, with the usual undrained manure heaps, etc., exposed them to very serious risk of surface contamination. This was actually proved by percolation experiments with salt and with lithium compounds, as a result of which the supply, though ample, had to be condemned on hygienic grounds. The wells at Amby were then bored and tested for 2½ months and found to give good water in ample supply. From August, 1923, until the new supply became available, the old supply was made safe by chlorination. Dosage ranging from 0.05 to 0.1 p. p. m. was found effective. Although no publicity was given to the

chlorine installation, complaints of taste were at first frequent, perhaps because of the initial higher dosage (0.2 p. p. m.), and were a factor in the readiness to embark on the new supply for which chlorination is unnecessary. A source of supply intrinsically safe is considered to be in many respects preferable to a doubtful source rendered safe by chlorination. The new supply has been shown to be in no danger of pollution from high water stages in the Maas.

Investigation of the Spring Water Supply of Batavia. C. P. Mom. *Mededeelingen Van Den Dienst Der Volksgezondheid in Nederlandsch-Indie,* vol. 4, 1926, pp. 309–337. (Abstract by Frank Hannan.)

From 1843 until 1922 Batavia was supplied with artesian water; in 1922 the present supply from the Tjiomas springs came into use. The springs are about 53 kilometers from Batavia in hilly country 270 meters above sea level in a barbed wire inclosure of about 15.000 square meters. They are quite numerous and have a combined flow of about 500 liters per second, of which about 350 liters per second are now being collected. Preliminary examination indicated a water of great purity and of probable deep origin. The bacteriological quality of the supply when taken into use fell short of expectation; hence a long and careful investigation which well exemplifies the inherent difficulties of collecting safely a spring supply, especially in tropical countries. A long and very valuable discussion of the interpretation of bacteriological findings and of its limitations is given, with reference more especially to tropical conditions. Great weight is attached to the important discoveries of Stiles and Crohurst with regard to underground migration. It was proved that in the plan originally adopted for collecting the spring water the exclusion of surface drainage was not complete. Neither was it feasible, under the very difficult local conditions, to exclude absolutely the very abundant subsurface water flowing down the Tjiomas valley, except at prohibitive cost. Judicious alterations have, however, reduced the invasion of extraneous water to negligible proportions and chlorination has been added, the final result being an absolutely reliable and satisfactory water.

Improvements in the Water Supply of Nyack, N. Y. Nicholas S. Hill, jr. *American City,* vol. 36, No. 6, June, 1927, pp. 776–782. (Abstract by S. H. Smith.)

Nyack, N. Y., is a village with a population of almost 4,500 according to the 1920 census, but water is supplied to a population of 7,000. In constructing the water purification improvements it was found that to repair and enlarge the existing slow sand filtration plant would cost 44 per cent more than to construct a new mechanical filter plant. As this greater initial cost would not be offset by a saving in operation, the slow sand plant was abandoned and construction was initiated on a new rapid sand plant.

The source of supply is the Hackensack River, which has a drainage area of 30 square miles above the intake. In the old system the water flowed by gravity over the slow sand filters, thence to a clear well, from which, after chlorine treatment, it was pumped into the mains. Operation of this plant showed preliminary sedimentation and automatic control of the rate of flow through the filters to be desirable.

The new plant makes use of the old slow sand filter bed for preliminary sedimentation, and of the old clear well as the source of supply for the new low lift pumps. New construction includes a 250,000 gallon coagulation basin giving a 4-hour detention period, 4 mechanical filter units, 10 by 14 feet, with a combined capacity of 1,500,000 gallons per 24 hours, and a filtered water well of 63,000 gallons capacity.

Proteolysis by Bacteria from Creamery Wastes. Max Levine and Lulu Soppeland. *Iowa State College of Agriculture and Mechanic Arts Official Publication,* vol. 25, No. 20, October 13, 1926, Bulletin 82. (32 pages.)

"This report deals with observations on the effect of air supply, initial reaction (H ion), concentrations of milk sugar, and concentration of various salts ($NaCl$, $MgCl_2$, $CaCl_2$, $FeCl_3$) on the digestion of gelatin and milk proteins by bacteria isolated from creamery wastes.

"With the organisms studied, digestion of gelatin was much more rapid in the presence of air. This was equally true for the cultures isolated anaerobically from milk wastes stored in tightly stoppered bottles and for those obtained from skim milk subjected to activated sludge treatment. The proteolytic bacteria most frequently encountered in milk wastes therefore find unfavorable conditions in the various anaerobic sewage treatment processes such as septic and Imhoff tanks.

"There was no correlation between change in reaction as determined by titration and that observed by H ion measurements. In gelatin with an initial reaction of pH 5.9 all cultures studied became distinctly alkaline (pH 6.5 to pH 7.7), whereas on the basis of titratable acidity some showed no change and others marked increases in acidity (over 300 p. p. m. as $CaCO_3$). Total acidity and alkalinity as ordinarily determined in sewage analysis may therefore be misleading as regards the actual acidity or change in reaction of the waste.

"The colon group of bacteria is extremely important in sewage purification, as it tends to prevent development of inhibitory acidities under aerobic conditions by rapid oxidation of organic acids.

"The optimum reaction for proteolysis was neutral or slightly alkaline (pH 7 to 7.5). Acidities up to pH 6.4 produced no appreciable inhibition under aerobic conditions, but it is felt that under the less favorable anaerobic conditions this acidity would be detrimental. Proteolysis was retarded by higher acidities and frequently stopped if the reaction reached pH 5 to 5.5.

"With pure cultures of nonlactose-fermenting, proteolytic bacteria, the presence of lactose up to 1 per cent did not affect digestion of gelatin or sodium caseinate, and the reaction remained alkaline. In mixed cultures of the foregoing with the lactose fermenting bacteria *communior*, acidity rapidly rose, and proteolysis was practically completely stopped if sufficient lactose was present to permit development of an acidity of pH 5.5. In these experiments, under aerobic conditions 0.1 per cent lactose was more than sufficient to bring about this limiting reaction; under anaerobic conditions smaller quantities of acid-producing materials would seriously affect digestion of sewage solids.

"There was a very distinct correlation between the valency of the cation and its inhibitory effect on digestion of gelatin and sodium caseinate. The production of amino and ammonia nitrogen from gelatin (initial reaction pH 7) by *Flavobacterium suaveolens*, which was the most proteolytic of the organisms studied, was markedly reduced by 153 milimols $NaCl$ (9,070 p. p. m.), 85 milimols $MgCl_2$ (8,060 p. p. m.), 25.6 milimols $CaCl_2$ (1,820 p. p. m.), and 1.64 milimols $FeCl_3$ (264 p. p. m.). Similar results were observed with respect to decomposition of sodium caseinate.

"In the presence of *Bact. cloacae* or *Flavo. suaveolens* and their end products sodium caseinate was precipitated by very much lower concentrations of $NaCl$ and $CaCl_2$ than was the case when these salts were present in sterile solutions. These precipitates could not be explained by changes in H ion concentration and are presumably due to other end products of bacterial metabolism. It is therefore felt that milk wastes entering a very hard water sewage would probably cause more voluminous precipitates than in a soft water sewage."

An Outline of Sewage Purification Studies at the Lawrence Experiment Station. H. W. Clark. *Industrial and Engineering Chemistry*, vol. 19, No. 4, April, 1927, pp. 448–461. (Abstract by A. S. Bedell.)

Since its establishment in 1886, the Lawrence Experiment Station has served, in addition to its other functions, as a training school for sanitary and hydraulic engineers. Except for the first few years, the activities have been directed by chemists and bacteriologists; nevertheless the work is more familiar to engineers than to chemists. The history of the tremendous advance in the economics of sewage purification from intermittent sand filtration, treating 50,000 gallons per acre per day, to aeration with living sludge, treating 15,000,000 gallons per acre per day, can be traced in the annual reports of the station.

The work on intermittent sand filtration not only resulted in the determination of fundamental biochemical laws, but also standardized methods of the chemical and physical analysis of sands and gravels. The development of gravel-stone filters enabled higher rates of operation, which were still further increased by forced aeration in gravel filters. Trickling filters were evolved from this, and certain laws were determined. Contact beds, chemical precipitation, septic tanks, and activated sludge process were all the subject of continued study. Special studies also were made of the purification of manufacturing wastes, the fertilizing value of sewage sludge, and the destructive distillation of sludge.

(Abstractor's note: No abstract can do justice to this pithy outline of long years of experimental work.)

Sewage Disposal Plant at St. Thomas, Ontario. Warren C. Miller. *Canadian Engineer*, vol. 52, No. 11, March 15, 1927, pp. 345–348. (Abstract by R. E. Thompson.)

The activated sludge plant at St. Thomas is described and illustrated. The first treatment works, consisting of three plain sedimentation tanks, were constructed in 1908. Diminishing flow of Kettle Creek, into which the effluent is discharged, accentuated by the construction of a large storage reservoir upstream, rendered further treatment absolutely necessary, and it was decided to reconstruct the plant for treatment by the activated sludge system. The plant consists of detritus tanks providing detention of 1 minute at velocity of 0.75 foot per second, coarse screens, a disintegrating tank and fine screen, two aeration tanks operated in parallel, providing 4½ hours' detention, with 25 per cent return of sludge and sewage flow of 2 m. (I.) g. d., sedimentation tanks equipped with Dorr clarifiers, providing 2¼ hours' detention of 2 m. g. d. flow, and a sludge digestion tank. The air compressors have capacity of 1 cubic foot of free air per gallon at the present rate of flow of 1,440,000 gallons per day. The sludge is returned by air lift, and the water displaced by the sludge entering the digestion chamber is also returned to the aeration tanks. The diffusers in the latter are arranged to induce a spiral circulation in the channels. At ordinary dry weather flows the effluent usually contains less than 50 p. p. m. of suspended matter, and the stability averages about 10 days. When the flow is in excess of 2 m. g. d., part of the storm water is by-passed after brief sedimentation and coarse screening. The cost of the plant was $65,000, or $32,500 per m. g. d. capacity.

The Public Health Service of Bulgaria. Ivan Golosmanoff. League of Nations Booklet, June, 1926, pp. 1–74. (Abstract by Fred Almquist.)

Organization.—The organization of the public health service consists of a central administration, namely, the Directorate of Public Health, and local administrations.

The directorate, which comes under the Ministry of the Interior, and has wide powers, is divided in five departments: (1) Public health; (2) infectious diseases; (3) hospitals; (4) pharmaceutics; (5) financial service. Each department has its own director who carries on the work pertaining to his department.

There is an advisory organization consisting of the director of public health,

chief of the army medical service, president of the Bulgarian Medical Association, six doctors, and one judge, who examine, approve, advise, settle disputes, and make decisions pertaining to health.

There are also the local health officers, the country being divided into provinces, then medical districts, and finally medical sections. These have their own public health councils. The frontier health service takes care of the borders and is divided into quarantine sectors. They have stations at all ports and where the railroads enter Bulgaria.

Aiding in general are several charitable organizations, among which are the Bulgarian Red Cross, the Bulgarian Anti-Tuberculosis Society, and others.

Preventive medicine.—The resources of the country are such that rapid strides can not be taken in the improvement of the hygienic conditions in the more populous areas. The towns carry out their own water supply systems, sometimes receiving State grants. In 1911 there were modern supply systems in 7 towns and 3 villages, while in 1923 there were 13 towns and 99 villages so equipped. Most supplies are entirely inadequate. The sewerage systems are very poor, many large towns having none whatsoever. Only 5 towns have modern sewerage systems, 7 towns have collection of refuse, and few towns possess a regular street-sweeping service.

Many other subjects are set forth and explained other than those above mentioned.

Some Problems of Seaside Health Resorts. Leslie Roseveare. *The Surveyor,* vol. 71, No. 1848, June 24, 1927, pp. 625–626. (Abstract by H. N. Old.)

The author discusses in a somewhat pessimistic but none the less candid manner the numerous problems confronting the governing authorities of a seaside resort.

Sewage and refuse disposal, particularly, present difficulties not encountered at inland or all-year-round communities. In order to be successful in so far as attraction and popularity are concerned, the psychological effect on the summer visitor must be considered. In the matter of the sewer line extension and outfall, and the avoidance of any hint of even storm water desposits near the beaches, as well as too frequent refuse collection, in order to cater to the aesthetic rather than the practical, considerable unnecessary expense is involved.

The widely varying conditions of the summer season and the so-called "off-season" cause problems of housing and unemployment seldom encountered elsewhere.

Other features discussed, but not directly concerning the public health, are local attractions, development of sea front, the economics of bathing pool operation and bathing privileges, tennis courts and golf courses, storm shelters and comfort stations, and, finally, the highway and motor-car problem.

DEATHS DURING WEEK ENDED OCTOBER 22, 1927

Summary of information received by telegraph from industrial insurance companies for week ended October 22, 1927, and corresponding week of 1926. (From the Weekly Health Index October 26, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Oct. 22, 1927	Corresponding week 1926
Policies in force	69, 081, 864	65, 641, 744
Number of death claims	12, 382	11, 169
Death claims per 1,000 policies in force, annual rate	9. 3	8. 9

Deaths from all causes in certain large cities of the United States during the week ended October 22, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, October 26, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Oct. 22, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Oct. 22, 1927 [2]
	Total deaths	Death rate [1]		Week ended Oct. 22, 1927	Corresponding week 1926	
Total (67 cities)	6,442	11.4	[3] 11.3	723	[3] 754	[4] 59
Akron	40			5	6	54
Albany [5]	43	18.7	14.9	4	4	83
Atlanta	64			11	6	
White	33			6	3	
Colored	31	(6)		5	3	
Baltimore [5]	203	12.9	12.7	35	27	108
White	144		10.6	23	16	80
Colored	59	(6)	24.5	12	11	187
Birmingham	76	18.4	19.3	12	8	
White	43		15.1	5	4	
Colored	33	(6)	25.9	7	4	
Boston	181	11.9	13.6	26	33	73
Bridgeport	24			1	3	19
Buffalo	123	11.7	13.2	12	18	50
Cambridge	27	11.4	11.5	3	6	53
Camden	33	12.9	10.3	7	5	120
Canton	11	5.1	9.5	4	6	95
Chicago [5]	717	12.1	10.3	75	58	65
Cincinnati	130	16.5	15.5	12	11	75
Cleveland	162	8.6	9.5	15	19	40
Columbus	62	11.1	13.4	9	14	84
Dallas	55	13.7	12.6	8	11	
White	44		12.7	6	10	
Colored	11	(6)	11.6	2	1	
Dayton	47	13.6	10.9	9	4	148
Denver	72	12.9	14.1	6	10	
Des Moines	34	11.9	11.1	0	2	0
Detroit	246	9.6	11.0	39	52	62
Duluth	25	11.3	13.4	0	2	0
El Paso	30	13.7	8.6	2	3	
Erie	26			2	4	39
Fall River [5]	23	9.0	7.6	7	4	124
Flint	37	13.5	6.9	10	6	163
Fort Worth	41	13.0	8.9	11	5	
White	38		7.8	10	4	
Colored	3	(6)	16.5	1	1	
Grand Rapids	35	11.5	10.7	4	2	59
Houston	65			10	5	
White	40			5	3	
Colored	25	(6)		5	2	
Indianapolis	100	13.9	12.5	9	8	71
White	86		12.6	7	7	63
Colored	14	(6)	11.9	2	1	122
Jersey City	76	12.3	9.0	8	5	60
Kansas City, Kans.	23	10.3	15.6	2	8	39
White	18		15.7	0	7	0
Colored	5	(6)	15.3	2	1	304
Kansas City, Mo.	94	12.8	9.3	9	3	
Knoxville	26	13.3		3		
White	18			1		
Colored	8	(6)		2		
Los Angeles	255			24	16	69
Louisville	67	10.9	16.4	9	8	77
White	52		14.4	7	7	68
Colored	15	(6)	27.5	2	1	140
Lowell	22	10.4	15.6	3	2	58
Lynn	15	7.4	7.5	2	2	53
Memphis	66	19.2	13.0	8	6	
White	28		10.1	2	3	
Colored	38	(6)	18.2	6	3	
Milwaukee	87	8.5	8.1	8	14	37
Minneapolis	97	11.4	9.6	2	3	11
Nashville	51	19.3	17.1	4	4	
White	32		11.7	2	2	
Colored	19	(6)	30.7	2	2	
New Bedford	15	6.5	13.1	0	6	0
New Haven	42	11.8	9.5	4	0	56

(Footnotes at end of table)

Deaths from all causes in certain large cities of the United States during the week ended October 22, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, October 26, 1927, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended Oct. 22, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Oct. 22, 1927 [2]
	Total deaths	Death rate [1]		Week ended Oct. 22, 1927	Corresponding week 1926	
New Orleans	135	16.6	15.7	12	11	
White	73		14.3	7	5	
Colored	62	(6)	19.6	5	6	
New York	1,127	9.8	11.0	137	137	57
Bronx Borough	138	7.8	9.7	9	11	29
Brooklyn Borough	395	9.1	9.1	73	43	76
Manhattan Borough	447	12.8	15.1	44	67	52
Queens Borough	117	7.5	7.2	8	14	34
Richmond Borough	30	10.6	15.7	3	2	56
Newark, N. J	85	9.5	8.9	15	10	74
Oakland	48	9.4	11.8	7	6	82
Oklahoma City	30			1	4	
Omaha	51	12.1	10.4	4	6	44
Paterson	31	11.2	11.7	4	2	71
Philadelphia	443	11.3	12.3	53	62	71
Pittsburgh	178	14.4	12.0	21	25	73
Portland, Oreg	61			1	5	11
Providence	49	9.1	9.7	5	6	42
Richmond	44	11.9	11.9	7	6	92
White	25		10.1	5	1	101
Colored	19	(6)	16.1	2	5	76
Rochester	64	10.3	7.8	2	6	17
St. Louis	208	12.9	12.4	17	19	
St. Paul	40	8.3	13.5	1	5	9
Salt Lake City [5]	31	11.9	9.8	2	3	30
San Antonio	50	12.4	10.9	5	6	
San Diego	31	14.1	12.3	1	1	21
San Francisco	141	12.8	9.5	4	3	25
Schenectady	21	11.8	10.1	0	0	0
Seattle	54			2	1	21
Somerville	12	6.1	5.7	1	0	36
Spokane	31	14.8	16.7	0	3	0
Springfield, Mass	34	12.1	10.8	4	2	62
Syracuse	55	14.6	11.8	7	9	90
Tacoma	25	12.2	10.3	2	2	47
Toledo	63	10.8	9.5	5	11	48
Trenton	32	12.2	10.5	6	2	104
Washington, D. C	113	10.9	11.7	7	15	40
White	70		10.3	3	12	25
Colored	43	(6)	15.6	4	3	73
Waterbury	21			1	0	24
Wilmington, Del	23	9.5	9.3	4	1	99
Worcester	36	9.6	12.4	3	8	36
Yonkers	21	9.2	6.7	3	0	68
Youngstown	26	8.0	12.5	3	8	42

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 66 cities.
[4] Data for 62 cities.
[5] Deaths for week ended Friday, Oct 21, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15, Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans, 14, Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended October 29, 1927

DIPHTHERIA

	Cases
Alabama	132
Arizona	1
Arkansas	29
California	105
Connecticut	32
Delaware	2
Florida	33
Idaho	2
Illinois	163
Indiana	61
Iowa [1]	13
Kansas	46
Louisiana	54
Maine	7
Maryland [1]	28
Massachusetts	120
Michigan	115
Minnesota	61
Mississippi	97
Missouri	78
Montana	2
Nebraska	12
New Jersey	117
New Mexico	15
New York	289
North Carolina	176
Oklahoma [2]	138
Oregon	14
Pennsylvania	208
Rhode Island	17
South Carolina	93
South Dakota	4
Tennessee	47
Texas	65
Utah [1]	7
Vermont	9
Washington	27
West Virginia	20
Wisconsin	49
Wyoming	4

INFLUENZA

	Cases
Alabama	35
Arkansas	54
California	16
Connecticut	3
Florida	13
Illinois	9
Indiana	7
Kansas	8
Louisiana	4
Maryland [1]	19
Massachusetts	9
Michigan	3
Minnesota	4
Missouri	1
New Jersey	5
New York	15
Oklahoma [2]	22
Oregon	25
Rhode Island	1
South Carolina	429
South Dakota	2
Tennessee	30
Texas	54
West Virginia	9
Wisconsin	24

MEASLES

	Cases
Alabama	36
Arkansas	26
California	46
Connecticut	11
Delaware	17
Florida	1
Illinois	27
Indiana	8
Iowa [1]	6
Kansas	37
Louisiana	4
Maine	35
Maryland [1]	22

[1] Week ended Friday.

[2] Exclusive of Oklahoma City and Tulsa.

Reports for Week Ended October 29, 1927—Continued

MEASLES—continued

	Cases
Massachusetts	180
Michigan	75
Minnesota	8
Missouri	8
Montana	3
Nebraska	1
New Jersey	12
New Mexico	12
New York	96
North Carolina	275
Oklahoma [2]	19
Oregon	11
Pennsylvania	247
Rhode Island	1
South Carolina	150
South Dakota	3
Tennessee	36
Texas	9
Utah [1]	1
Vermont	2
Washington	21
West Virginia	5
Wisconsin	44
Wyoming	1

MENINGOCOCCUS MENINGITIS

California	4
Connecticut	1
Idaho	1
Illinois	4
Iowa [1]	1
Kansas	1
Maryland [1]	1
Massachusetts	1
Michigan	3
Minnesota	3
Missouri	2
New Jersey	2
New York	1
Oklahoma [2]	1
Pennsylvania	4
South Dakota	1
Washington	1
Wisconsin	5

POLIOMYELITIS

Alabama	1
Arizona	1
Arkansas	2
California	30
Connecticut	9
Florida	3
Idaho	2
Illinois	25
Indiana	19
Iowa	8
Kansas	14
Louisiana	2
Maine	6
Maryland [1]	3
Massachusetts	66

POLIOMYELITIS—continued

	Cases
Michigan	18
Minnesota	6
Missouri	12
Nebraska	14
New Jersey	8
New Mexico	3
New York	31
North Carolina	1
Ohio	51
Oklahoma [2]	7
Oregon	26
Pennsylvania	18
Rhode Island	4
South Carolina	2
South Dakota	6
Tennessee	2
Texas	3
Utah [1]	2
Vermont	6
Virginia	2
Washington	21
West Virginia	9
Wisconsin	9
Wyoming	1

SCARLET FEVER

Alabama	35
Arizona	2
Arkansas	34
California	129
Connecticut	38
Delaware	4
Florida	11
Idaho	12
Illinois	194
Indiana	109
Iowa [1]	30
Kansas	114
Louisiana	14
Maine	55
Maryland [1]	34
Massachusetts	201
Michigan	129
Minnesota	155
Mississippi	33
Missouri	111
Montana	21
Nebraska	41
New Jersey	90
New Mexico	19
New York	197
North Carolina	145
Oklahoma [2]	51
Oregon	16
Pennsylvania	243
Rhode Island	13
South Carolina	30
South Dakota	25
Tennessee	46
Texas	24
Utah [1]	8

[1] Week ended Friday.

[2] Exclusive of Oklahoma City and Tulsa.

Reports for Week Ended October 29, 1927—Continued

SCARLET FEVER—continued

	Cases
Vermont	11
Washington	36
West Virginia	68
Wisconsin	102
Wyoming	16

SMALLPOX

	Cases
Alabama	2
Arkansas	1
California	2
Idaho	4
Illinois	4
Indiana	7
Iowa [1]	33
Kansas	25
Michigan	5
Minnesota	3
Mississippi	14
Missouri	25
Montana	15
Nebraska	4
New York	3
North Carolina	12
Oklahoma [2]	0
Oregon	17
Rhode Island	3
South Carolina	1
South Dakota	21
Tennessee	1
Texas	7
Utah [1]	42
Washington	11
West Virginia	3
Wisconsin	9
Wyoming	1

TYPHOID FEVER

	Cases
Alabama	27
Arizona	3
Arkansas	39
California	6
Connecticut	6
Delaware	2
Florida	13
Illinois	33
Indiana	14
Iowa [1]	8
Kansas	13
Louisiana	20
Maine	9
Maryland [1]	22
Massachusetts	9
Michigan	13
Minnesota	3
Mississippi	9
Missouri	29
Montana	2
Nebraska	5
New Jersey	13
New Mexico	21
New York	54
North Carolina	19
Oklahoma [2]	60
Oregon	20
Pennsylvania	27
Rhode Island	1
South Carolina	32
South Dakota	4
Tennessee	66
Texas	7
Utah [1]	2
Washington	6
West Virginia	32
Wisconsin	7
Wyoming	1

Reports for Week Ended October 22, 1927

DIPHTHERIA

	Cases
District of Columbia	22
North Dakota	4

MEASLES

	Cases
North Dakota	7

MENINGOCOCCUS MENINGITIS

	Cases
North Dakota	1

POLIOMYELITIS

	Cases
District of Columbia	3
Ohio	46

SCARLET FEVER

	Cases
District of Columbia	17
North Dakota	31

SMALLPOX

	Cases
North Dakota	2

TYPHOID FEVER

	Cases
District of Columbia	3
North Dakota	3

[1] Week ended Friday.

[2] Exclusive of Oklahoma City and Tulsa.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
September, 1927										
Arkansas	1	52	104	1,559	33	193	9	38	1	230
Illinois	25	314	30	10	75	1	168	400	52	251
Iowa	2	80			16		28	48	32	15
Louisiana	2	140	26	212	33	64	6	21	16	103
Maine	0	14	0		27		36	67	0	20
Maryland	2	117	19	4	35	3	5	64	0	115
Mississippi	2	192	1,084	17,366	362	1,172	8	98	11	136
Missouri	1	144	15	29	23		86	130	29	138
Montana	4	11		1	10		3	35	27	21
North Carolina	6	455			467		5	257	37	187
Ohio	4	420	32		56		428	437	34	206
Oregon	7	22	36	3	48		72	39	40	26
Rhode Island	1	31	2	3			16	56	0	11
South Carolina	0	403	813	3,150	169	288	11	68	12	356
South Dakota	0	12		1	5		16	62	15	18
West Virginia	1	75	11		22		70	167	28	175
Wisconsin	17	145	117		373		71	232	50	54
Wyoming	1	5			13		2	19	2	6

September, 1927

	Cases
Actinomycosis:	
Montana	1
Chicken pox:	
Arkansas	48
Illinois	204
Iowa	11
Louisiana	1
Maine	5
Maryland	45
Mississippi	167
Missouri	17
Montana	22
North Carolina	28
Ohio	162
Oregon	19
Rhode Island	3
South Carolina	33
South Dakota	4
West Virginia	26
Wisconsin	146
Wyoming	8
Dengue:	
Mississippi	18
South Carolina	7
Dysentery:	
Illinois	76
Louisiana	15
Maryland	62
Mississippi (amoebic)	44
Mississippi (bacillary)	666
Ohio	2
Oregon	1
German measles:	
Illinois	8
Maine	4
Maryland	4
North Carolina	8
Ohio	9
Rhode Island	1

September, 1927—Continued

	Cases
Hookworm disease:	
Arkansas	1
Louisiana	17
Mississippi	329
South Carolina	112
Impetigo contagiosa:	
Iowa	2
Maryland	7
Oregon	5
Wyoming	2
Lead poisoning:	
Illinois	6
Ohio	20
Leprosy:	
Oregon	1
Lethargic encephalitis:	
Illinois	7
Iowa	1
Louisiana	3
Maryland	3
Montana	2
Ohio	10
Oregon	2
Wisconsin	4
Malta fever:	
Iowa	1
Milk sickness:	
Illinois	1
Mumps:	
Arkansas	150
Illinois	154
Iowa	9
Louisiana	8
Maine	6
Maryland	17
Mississippi	146
Missouri	27
Ohio	161
Oregon	22

September, 1927—Continued

	Cases
Mumps—Continued.	
Rhode Island	5
South Dakota	7
Wisconsin	106
Wyoming	6
Ophthalmia neonatorum:	
Arkansas	1
Illinois	56
Maryland	1
Mississippi	15
Missouri	2
Ohio	128
South Carolina	26
Paratyphoid fever:	
Arkansas	3
Illinois	2
Louisiana	2
Maine	2
South Carolina	36
Wyoming	1
Puerperal septicemia:	
Illinois	8
Mississippi	53
Rabies in animals:	
Maryland	6
Mississippi	11
Missouri	6
Oregon	2
South Carolina	6
Rocky Mountain spotted or tick fever.	
Wyoming	1
Scabies:	
Maryland	2
Oregon	7
Septic sore throat:	
Illinois	5
Maryland	2
Missouri	2
North Carolina	51
Ohio	56
Oregon	2
Rhode Island	4

September, 1927—Continued

	Cases
Tetanus:	
Illinois	10
Louisiana	5
Maine	2
Maryland	2
Missouri	1
Montana	1
Trachoma:	
Arkansas	3
Illinois	7
Louisiana	1
Mississippi	12
Missouri	10
Montana	2
Ohio	11
South Dakota	4
Trichinosis:	
Illinois	2
Tularaemia:	
Wyoming	1
Vincent's angina:	
Maine	9
Maryland	6
Wyoming	1
Whooping cough:	
Arkansas	34
Illinois	904
Iowa	29
Louisiana	16
Maine	68
Maryland	174
Mississippi	780
Missouri	129
Montana	17
North Carolina	508
Ohio	359
Oregon	23
Rhode Island	14
South Carolina	235
South Dakota	49
West Virginia	91
Wisconsin	510
Wyoming	7

RECIPROCAL NOTIFICATIONS

Notifications regarding communicable diseases sent during the month of September, 1927, to other State health departments by departments of health of certain States

Referred by—	Meningococcus meningitis	Diphtheria	Paratyphoid fever	Poliomyelitis	Smallpox	Trachoma	Tuberculosis	Typhoid fever	Whooping cough
California							1		
Connecticut			1	2			1	1	1
Illinois	1			2	3		1	13	
Massachusetts								11	
Minnesota				1		2	17	5	
New York		2		3				3	
Rhode Island							1	1	

POLIOMYELITIS IN CHARITON COUNTY, MO.

A report dated October 25, 1927, states that since July 11, 1927, 55 cases of poliomyelitis with 9 deaths had occurred in Chariton County, Mo. During the week ended October 22 there were two cases reported.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 99 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,800,000. The estimated population of the 93 cities reporting deaths is more than 30,160,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended October 15, 1927, and October 16, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
42 States	2,128	2,279	
99 cities	854	955	1,034
Measles.			
41 States	1,183	1,746	
99 cities	297	251	
Poliomyelitis:			
42 States	501	85	
Scarlet fever			
42 States	1,947	2,398	
99 cities	553	744	652
Smallpox			
42 States	190	130	
99 cities	36	23	21
Typhoid fever.			
42 States	811	1,335	
99 cities	114	183	153
Deaths reported			
Influenza and pneumonia:			
93 cities	445	476	
Smallpox:			
93 cities	0	0	

City reports for week ended October 15, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	2	1	1	0	0	0	0	1
New Hampshire:									
Concord	22,546	0	0	1	0	0	1	0	0
Manchester	83,097	0	4	0	0	0	0	0	2
Vermont:									
Barre	10,008	0	0	0	0	0	0	0	0
Burlington	24,089	0	0	0	0	0	1	0	0
Massachusetts:									
Boston	779,620	33	40	18	2	1	43	10	14
Fall River	128,993	0	4	4	2	0	0	0	1
Springfield	142,065	0	2	6	0	0	0	0	0
Worcester	190,757	24	5	1	0	0	0	14	3
Rhode Island:									
Pawtucket	69,760	0	1	2	0	0	0	0	2
Providence	267,918	0	5	10	0	0	7	0	8
Connecticut:									
Bridgeport	(1)	0	9	4	0	0	0	0	1
Hartford	160,197	4	5	7	0	0	1	0	7
New Haven	178,927	10	3	1	0	0	5	1	4
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	6	16	7	-------	0	3	5	8
New York	5,873,356	42	119	140	2	8	22	14	85
Rochester	316,786	3	10	0	-------	0	0	1	1
Syracuse	182,003	9	8	0	-------	0	8	7	1
New Jersey:									
Camden	128,642	13	7	1	1	1	0	4	2
Newark	452,513	10	9	15	2	0	1	13	5
Trenton	132,020	0	4	0	0	0	0	2	3
Pennsylvania:									
Philadelphia	1,979,364	24	58	48	-------	5	0	20	21
Pittsburgh	631,563	12	27	37	-------	3	73	10	18
Reading	112,707	9	3	2	-------	0	0	0	2
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	10	12	10	0	0	0	0	4
Cleveland	936,485	20	47	52	4	1	2	30	8
Columbus	279,836	1	7	8	0	1	0	1	2
Toledo	287,380	1	13	2	0	0	9	3	2
Indiana:									
Fort Wayne	97,846	-------	3	-------	-------	-------	-------	-------	-------
Indianapolis	358,819	1	14	10	0	0	6	13	8
South Bend	80,091	0	2	0	0	0	0	0	0
Terre Haute	71,071	0	1	2	0	0	0	0	1
Illinois:									
Chicago	2,995,239	23	88	67	7	1	1	13	28
Springfield	63,923	1	2	0	0	0	1	0	1
Michigan:									
Detroit	1,245,824	9	68	38	0	1	6	10	19
Flint	130,316	3	12	3	0	0	0	13	1
Grand Rapids	153,698	2	6	0	0	0	6	1	0

[1] No estimate made.

City reports for week ended October 15, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL—continued									
Wisconsin:									
Kenosha	50,891	7	1	0	0	0	0	3	0
Madison	46,385	2	1	0	0	0	0	0	0
Milwaukee	509,192	22	20	12	0	0	3	5	0
Racine	67,707	0	2	2	0	0	1	0	0
Superior	39,671	0	0	0	0	0	0	0	2
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	0	3	2	0	0	0	0	2
Minneapolis	425,435	17	31	20	0	0	1	1	6
St. Paul	246,001	9	19	4	0	1	1	6	7
Iowa:									
Davenport	52,469	1	2	0	0	--------	0	0	--------
Sioux City	76,411	6	3	0	0	--------	0	6	--------
Waterloo	36,771	0	1	0	0	--------	0	4	--------
Missouri:									
Kansas City	367,481	5	11	5	0	0	0	8	8
St. Joseph	78,342	1	3	2	1	0	0	0	1
St. Louis	821,543	5	45	20	0	0	4	3	--------
North Dakota:									
Fargo	26,403	--------	0	--------	--------	--------	--------	--------	--------
Grand Forks	14,811	6	0	0	0	--------	0	0	--------
South Dakota:									
Aberdeen	15,036	0	0	0	0	--------	0	0	--------
Sioux Falls	30,127	0	1	0	0	--------	0	0	--------
Nebraska:									
Lincoln	60,941	1	2	0	0	0	0	4	0
Omaha	211,768	3	13	1	0	0	1	0	5
Kansas:									
Topeka	55,411	1	2	4	0	0	0	0	0
Wichita	88,367	0	4	2	0	0	0	0	0
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	2	3	0	0	0	0	0	1
Maryland:									
Baltimore	796,296	24	26	34	2	0	10	2	28
Cumberland	33,741	0	1	0	0	0	0	0	0
Frederick	12,035	0	1	0	0	0	0	0	0
District of Columbia:									
Washington	497,906	10	14	15	0	0	2	--------	13
Virginia:									
Lynchburg	30,395	1	2	9	0	0	0	0	0
Norfolk	(1)	6	3	4	0	0	0	0	4
Richmond	186,403	0	23	15	0	1	3	2	0
Roanoke	58,208	0	7	3	0	0	8	0	1
West Virginia:									
Charleston	49,019	0	2	1	0	0	0	0	2
Wheeling	56,208	2	2	0	0	0	0	0	2
North Carolina:									
Raleigh	30,371	2	4	0	0	0	0	0	0
Wilmington	37,061	0	1	0	0	0	1	0	1
Winston-Salem	69,031	1	5	4	0	0	0	1	0
South Carolina:									
Charleston	73,125	0	1	2	13	0	0	0	1
Columbia	41,225	0	3	5	0	--------	10	1	--------
Greenville	27,311	0	2	2	0	0	1	1	0
Georgia:									
Atlanta	(1)	0	10	13	6	3	2	0	4
Brunswick	16,809	0	0	2	0	0	0	7	0
Savannah	93,134	0	3	1	1	0	1	2	1
Florida:									
Miami	69,754	0	--------	0	0	0	0	7	3
St. Petersburg	26,847	--------	0	--------	--------	0	--------	--------	0
Tampa	94,743	0	1	2	0	0	0	1	1

[1] No estimate made.

City reports for week ended October 15, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	3	0	0	0	0	0	0
Lexington	46,895	0		0	0	0	0	0	0
Louisville	305,935	1	10	1	0	0	0	3	1
Tennessee:									
Memphis	174,533	0	10	8	0	0	24	0	3
Nashville	136,220	2	5	4	0	1	0	3	1
Alabama:									
Birmingham	205,670	1	7	9	1	0	0	1	4
Mobile	65,955	0	2	2	0	1	0	0	0
Montgomery	46,481	0	3	7	0	0	1	1	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	0	2	3	0		0	0	
Little Rock	74,216	0	2	0	0	0	7	0	1
Louisiana:									
New Orleans	414,493	0	9	8	4	2	2	0	9
Shreveport	57,857	3	0	2	0	0	0	0	1
Oklahoma.									
Oklahoma City	(1)	1	4	7	4	0	0	0	1
Tulsa	124,478	2		4	0		0	0	
Texas									
Dallas	194,450	0	11	21	0	1	0	0	1
Galveston	48,375	0	0	0	0	0	0	0	0
Houston	164,954	0	3	10	0	0	0	0	4
San Antonio	198,069	0	2	17	0	0	4	0	0
MOUNTAIN									
Montana.									
Billings	17,971	0	0	0	0	0	0	0	0
Great Falls	29,883	0	1	0	0	0	0	1	0
Helena	12,037	2	0	0	0	0	0	0	0
Missoula	12,668	0	0	0	0	0	0	0	1
Idaho.									
Boise	23,042	0	0	0	0	0	0	9	0
Colorado:									
Denver	280,911	5	17	8		1	2	4	7
Pueblo	43,787	0	4	2	0	0	0	0	1
New Mexico:									
Albuquerque	21,000	0	1	1	0	0	0	2	1
Utah:									
Salt Lake City	130,948	18	4	12	0	0	0	0	4
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	(1)	11	8	7	0		5	2	
Spokane	108,897	6	4	9	0		4	0	
Tacoma	104,455	0	4	5	0	0	1	1	0
Oregon									
Portland	282,383	4	10	5	0	0	3	0	1
California									
Los Angeles	(1)	7	38	30	9	0	4	12	22
Sacramento	72,260	2	2	2	0	0	0	0	0
San Francisco	557,530	21	16	6	1	1	8	5	2

[1] No estimate made.

City reports for week ended October 15, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
NEW ENGLAND											
Maine:											
Portland	0	0	0	0	0	1	0	3	0	1	9
New Hampshire:											
Concord	0	0	0	0	0	1	0	0	0	0	6
Manchester	1	1	0	0	0	0	0	0	0	0	12
Vermont:											
Barre	0	0	0	0	0	1	0	0	0	0	5
Burlington	0	0	0	0	0	1	0	0	0	0	10
Massachusetts:											
Boston	27	39	0	0	0	20	3	1	1	17	195
Fall River	2	0	0	0	0	2	1	0	0	0	24
Springfield	4	1	0	0	0	2	0	1	0	1	32
Worcester	7	4	0	0	0	3	1	0	0	1	35
Rhode Island:											
Pawtucket	1	1	0	0	0	0	0	0	0	0	24
Providence	3	9	0	0	0	3	1	1	0	0	66
Connecticut:											
Bridgeport	3	1	0	0	0	0	0	0	0	0	16
Hartford	3	1	0	0	0	0	1	1	0	1	39
New Haven	4	0	0	0	0	3	1	0	0	3	31
MIDDLE ATLANTIC											
New York:											
Buffalo	13	4	0	0	0	7	2	0	1	21	118
New York	56	48	0	0	0	[1] 77	30	21	3	104	1,181
Rochester	5	4	0	0	0	2	1	2	0	1	65
Syracuse	5	0	0	0	0	1	1	0	1	10	33
New Jersey:											
Camden	4	0	0	0	0	1	2	0	0	4	23
Newark	7	9	0	0	0	10	2	2	0	33	91
Trenton	0	0	0	0	0	3	0	2	0	2	36
Pennsylvania:											
Philadelphia	42	38	0	0	0	37	10	5	0	23	430
Pittsburgh	28	24	0	0	0	4	3	0	0	13	143
Reading	1	1	0	0	0	1	1	0	0	2	34
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	10	6	0	2	0	9	1	5	1	6	116
Cleveland	20	26	0	0	0	17	3	0	0	24	141
Columbus	7	14	0	0	0	4	1	0	0	0	66
Toledo	9	5	0	0	0	5	2	0	0	4	62
Indiana:											
Fort Wayne	1	------	1	------	------	------	0	------	------	------	------
Indianapolis	6	11	1	2	0	6	2	8	0	3	80
South Bend	2	1	1	0	0	0	0	0	0	0	18
Terre Haute	2	2	0	1	0	0	0	0	0	0	21
Illinois:											
Chicago	63	29	0	1	0	54	7	7	0	74	579
Springfield	2	1	0	0	0	0	1	2	0	0	22
Michigan:											
Detroit	50	31	2	1	0	18	5	2	0	47	275
Flint	8	14	0	0	0	0	0	0	0	2	22
Grand Rapids	6	4	0	0	0	1	0	0	0	2	32
Wisconsin:											
Kenosha	1	7	0	0	0	0	1	0	0	3	5
Madison	1	0	0	0	0	0	0	0	0	0	9
Milwaukee	17	6	2	0	0	0	1	1	0	11	97
Racine	4	1	0	0	0	0	0	0	0	1	------
Superior	2	1	0	0	0	0	0	1	0	0	8
WEST NORTH CENTRAL											
Minnesota:											
Duluth	6	3	0	0	0	0	1	0	0	8	16
Minneapolis	34	11	1	0	0	4	1	1	0	0	89
St. Paul	14	13	2	0	0	1	1	2	0	5	67

[1] Pulmonary tuberculosis only.

City reports for week ended October 15, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
WEST NORTH CENTRAL—continued											
Iowa:											
Davenport	1	1	0	0			0	0		0	
Sioux City	2	2	0	0			0	0		0	
Waterloo	2	1	0	0			1	0		4	
Missouri:											
Kansas City	8	12	0	0	0	7	2	1	0	2	89
St. Joseph	3	0	0	11	0	2	0	0	0	0	24
St. Louis	24	28	0	1	0	11	5	6	0	13	187
North Dakota:											
Fargo	1		0				0				
Grand Forks	1	0	0	0			0	0		0	
South Dakota:											
Aberdeen	2	0	0	0			0	0		0	
Sioux Falls	1	8	0	0			0	0		0	6
Nebraska:											
Lincoln	0	1	0	0	0	0	0	0	0	3	10
Omaha	4	2	0	1	0	2	1	0	0	0	56
Kansas:											
Topeka	3	3	0	0	0	0	0	1	0	3	10
Wichita	3	4	0	0	0	1	1	0	0	1	35
SOUTH ATLANTIC											
Delaware:											
Wilmington	3	0	0	0	0	0	0	0	0	0	39
Maryland:											
Baltimore	10	4	0	0	0	16	9	3	0	21	225
Cumberland	0	0	0	0	0	0	0	0	0	0	7
Frederick	0	0	0	0	0	0	0	0	0	0	
District Columbia:											
Washington	11	13	1	0	0	8	3	2	0	18	104
Virginia:											
Lynchburg	1	5	0	0	0	2	0	0	0	1	11
Norfolk	1	3	0	0	0	2	0	0	0	2	
Richmond	8	3	0	0	0	2	1	1	0	0	31
Roanoke	3	3	0	0	0	0	1	1	1	0	13
West Virginia:											
Charleston	1	3	0	0	0	2	1	2	0	1	23
Wheeling	4	1	0	0	0	1	1	0	0	0	14
North Carolina:											
Raleigh	2	1	0	0	0	1	0	0	0	0	13
Wilmington	1	0	0	0	0	0	0	0	0	4	13
Winston-Salem	2	1	0	0	0	1	2	0	0	3	21
South Carolina:											
Charleston	0	1	0	1	0	0	1	3	1	0	24
Columbia	0	1	0	0			1	2		0	
Greenville	1	1	0	0	0	0	0	1	0	0	
Georgia:											
Atlanta	6	9	1	0	0	5	2	0	0	2	56
Brunswick	0	0	0	0	0	0	0	0	0	0	4
Savannah	1	1	0	0	0	1	0	0	0	0	32
Florida:											
Miami		1		0	0	0		0	0	3	14
St Petersburg	0		0		0	0	0		0		6
Tampa	1	0	0	0	0	3	1	0	0	0	26
EAST SOUTH CENTRAL											
Kentucky:											
Covington	1	1	0	0	0	1	0	0	0	0	26
Lexington		1		0	0	2		0	0	0	11
Louisville	4	6	0	0	0	4	3	3	0	2	77
Tennessee:											
Memphis	4	5	0	0	0	4	4	1	0	5	62
Nashville	4	1	0	0	0	0	3	0	0	0	28
Alabama:											
Birmingham	5	2	0	0	0	3	3	1	0	2	48
Mobile	1	0	0	0	0	0	0	0	0	0	16
Montgomery	0	1	0	0	0	0	0	1	0	0	

City reports for week ended October 15, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	1	0	0	-------	------	0	0	-------	0	-------
Little Rock	2	6	0	0	0	5	1	0	0	0	-------
Louisiana:											
New Orleans	3	3	0	0	0	19	3	2	0	1	147
Shreveport	1	0	0	1	0	2	0	1	0	0	30
Oklahoma:											
Oklahoma City	2	1	0	1	0	1	1	0	0	0	29
Tulsa	------	1	------	0	-------	------	------	0	-------	1	-------
Texas:											
Dallas	4	7	0	0	0	1	2	0	0	0	43
Galveston	0	3	0	0	0	2	1	0	0	0	14
Houston	0	0	0	0	0	5	0	3	0	0	43
San Antonio	1	1	0	0	0	4	1	1	0	0	30
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	0	1	0	0	1	3
Great Falls	1	1	0	0	0	0	0	1	0	0	5
Helena	1	1	0	0	0	1	0	0	0	0	5
Missoula	0	1	0	0	0	0	0	0	0	0	9
Idaho											
Boise	0	0	1	0	0	0	0	0	0	0	7
Colorado:											
Denver	6	5	1	0	0	5	2	1	0	4	89
Pueblo	1	1	0	1	0	0	0	0	0	0	9
New Mexico:											
Albuquerque	1	0	0	0	0	1	2	3	0	0	9
Utah											
Salt Lake City	2	3	0	7	0	1	2	5	0	1	34
Nevada.											
Reno	0	0	0	0	0	0	0	0	0	0	12
PACIFIC											
Washington											
Seattle	8	7	1	0	-------	------	2	1	-------	6	-------
Spokane	6	5	2	5	-------	------	0	0	-------	0	-------
Tacoma	3	0	1	1	0	0	1	0	0	0	26
Oregon											
Portland	8	5	3	2	0	3	1	0	0	0	64
California.											
Los Angeles	11	18	3	0	0	20	4	1	0	14	245
Sacramento	1	0	1	0	0	0	1	0	0	0	-------
San Francisco	7	7	0	0	0	9	1	1	0	15	136

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Maine:									
Portland	0	0	0	0	0	0	0	2	0
Massachusetts:									
Boston	0	0	0	0	0	0	2	36	6
Worcester	0	0	0	0	0	0	0	1	0
Rhode Island:									
Providence	0	0	1	0	0	0	0	1	0
Connecticut:									
Hartford	1	0	0	1	0	0	1	0	0
New Haven	0	0	0	0	0	0	0	1	0

City reports for week ended October 15, 1927—Continued

Division, State, and city	Meningo coccus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
MIDDLE ATLANTIC									
New York:									
New York	2	1	6	5	0	0	12	20	4
Rochester	0	0	0	0	0	0	0	1	0
New Jersey:									
Newark	0	0	1	0	0	0	1	0	0
Pennsylvania:									
Philadelphia	1	1	3	2	0	0	0	5	0
Pittsburgh	0	1	0	0	0	0	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	0	0	0	0	0	0	1	7	1
Cleveland	0	0	1	0	0	0	1	3	0
Columbus	0	0	0	0	0	0	0	2	0
Toledo	0	0	0	0	0	0	0	1	1
Indiana:									
Indianapolis	0	0	0	0	0	0	1	1	0
Illinois:									
Chicago [1]	2	1	0	0	0	0	3	4	0
Springfield	1	1	0	0	0	0	0	0	0
Michigan:									
Detroit [1]	1	0	0	0	0	0	1	6	1
Wisconsin:									
Madison	0	0	0	0	0	0	0	1	0
Milwaukee	1	2	0	0	0	0	1	1	0
Racine	1	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	0	0	0	0	0	0	0	1	0
Minneapolis	1	0	0	0	0	0	0	1	0
Iowa:									
Sioux City	0		0		0		0	2	
Missouri:									
Kansas City	1	1	0	0	0	0	1	2	0
South Dakota:									
Sioux Falls	0		0		0		0	1	
Nebraska:									
Omaha	0	0	0	0	0	0	0	3	1
SOUTH ATLANTIC [2]									
District of Columbia:									
Washington	0	0	0	0	0	0	1	2	2
West Virginia:									
Wheeling	0	0	0	0	0	0	0	5	0
North Carolina:									
Winston-Salem	0	0	0	0	1	0	0	0	0
South Carolina:									
Charleston [3]	0	0	1	0	3	0	0	0	0
Georgia:									
Atlanta	0	0	0	0	0	1	0	0	0
Savannah [2]	0	0	0	0	1	0	0	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Louisville	0	0	0	0	0	0	1	2	0
Tennessee:									
Nashville	0	0	0	0	1	0	0	1	0
Alabama: [2]									
Montgomery [2]	0	0	0	0	1	0	0	0	

[1] Rabies (human). 1 case and 1 death at Chicago, Ill., and 1 case and 1 death at Detroit, Mich.
[2] Typhus fever: 2 cases at Savannah, Ga., 3 cases at Tampa, Fla., 1 case at Mobile, Ala., and 1 case at Montgomery, Ala.
[3] Dengue: 13 cases at Charleston, S. C.

City reports for week ended October 15, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	1	0	1	1
Louisiana:									
New Orleans	0	0	0	0	2	2	0	1	0
Shreveport	0	0	0	0	0	1	0	0	0
Texas:									
Dallas	0	0	0	1	1	1	0	3	0
Houston	0	0	0	0	0	0	0	3	1
MOUNTAIN									
Montana:									
Great Falls	0	0	0	0	0	0	0	2	0
Missoula	1	1	0	0	0	0	0	0	0
Colorado:									
Denver	1	0	0	0	0	0	0	4	0
Utah:									
Salt Lake City	0	0	0	0	0	0	0	1	0
PACIFIC									
Washington:									
Seattle	0		0		0		0	2	
Spokane	1		0		0		1	1	
Tacoma	0	0	0	0	0	0	1	9	2
Oregon:									
Portland	0	0	0	0	0	0	1	2	0
California:									
Los Angeles	0	0	0	0	1	0	0	4	3
Sacramento	1	0	0	0	0	0	0	1	2
San Francisco	1	0	0	0	1	1	0	2	0

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended October 15, 1927, compared with those for a like period ended October 16, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below:

Summary of weekly reports from cities, September 11 to October 15, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Sept. 18, 1926	Sept. 17, 1927	Sept. 25, 1926	Sept. 24, 1927	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927
101 cities	84	101	107	103	127	[2] 129	159	143	165	[3] 144
New England	35	53	73	91	66	109	66	132	85	128
Middle Atlantic	63	106	70	96	81	123	119	129	100	123
East North Central	95	82	128	105	133	130	188	158	218	[4] 138
West North Central	95	125	127	87	143	123	177	145	210	[5] 120
South Atlantic	110	112	127	105	162	165	214	170	246	203
East South Central	109	117	134	82	269	66	253	153	269	158
West South Central	77	138	69	206	210	197	176	197	219	256
Mountain	237	225	137	234	292	[2] 143	173	126	164	198
Pacific	99	92	212	76	174	120	198	99	174	154

MEASLES CASE RATES

	Sept. 18, 1926	Sept. 17, 1927	Sept. 25, 1926	Sept. 24, 1927	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927
101 cities	28	20	38	27	37	[2] 26	31	40	43	[3] 50
New England	19	30	38	39	21	53	33	118	26	132
Middle Atlantic	10	14	9	30	10	33	11	56	9	53
East North Central	23	18	24	18	25	13	29	11	36	[4] 18
West North Central	12	28	28	20	10	6	26	12	44	[5] 14
South Atlantic	9	14	11	36	13	29	15	31	20	69
East South Central	16	10	10	15	5	20	5	56	0	127
West South Central	4	17	0	0	0	4	0	8	13	55
Mountain	73	45	118	45	109	[2] 0	109	27	237	18
Pacific	212	45	308	52	327	47	179	45	289	58

SCARLET FEVER CASE RATES

	Sept. 18, 1926	Sept. 17, 1927	Sept. 25, 1926	Sept. 24, 1927	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927
101 cities	65	69	79	67	100	[2] 84	111	103	129	[3] 94
New England	75	102	71	123	104	102	144	139	144	130
Middle Atlantic	44	46	56	42	51	59	57	101	62	63
East North Central	60	89	80	69	98	101	120	102	132	[4] 104
West North Central	129	87	153	60	198	79	216	107	319	[5] 159
South Atlantic	48	78	78	107	110	107	99	123	125	91
East South Central	119	46	83	46	98	117	145	66	145	82
West South Central	30	42	52	50	69	105	69	67	86	88
Mountain	82	99	118	153	319	[2] 72	301	126	264	108
Pacific	118	55	118	71	174	76	158	76	204	97

SMALLPOX CASE RATES

	Sept. 18, 1926	Sept. 17, 1927	Sept. 25, 1926	Sept. 24, 1927	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927
101 cities	2	5	3	6	1	[2] 4	3	5	4	[3] 6
New England	0	0	0	0	0	0	0	0	0	0
Middle Atlantic	0	0	0	0	0	0	0	0	0	0
East North Central	0	0	1	1	0	1	1	1	3	[4] 5
West North Central	0	22	2	8	2	12	2	14	6	[5] 26
South Atlantic	9	4	6	0	4	4	0	4	4	2
East South Central	0	0	0	10	0	0	10	0	0	0
West South Central	4	4	13	0	0	8	4	4	4	4
Mountain	0	27	0	162	9	[2] 108	9	54	9	72
Pacific	19	37	19	21	5	24	19	31	32	16

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.
[2] Denver, Colo., not included.
[3] Fort Wayne, Ind., and Fargo, N. Dak., not included.
[4] Fort Wayne, Ind., not included.
[5] Fargo, N. Dak., not included.

Summary of weekly reports from cities, September 11 to October 15, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	Sept. 18, 1926	Sept. 17, 1927	Sept. 25, 1926	Sept 24, 1927	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927
101 cities	53	33	44	28	42	[2] 19	33	25	32	[3] 19
New England	33	46	9	63	17	12	17	23	57	16
Middle Atlantic	55	37	45	24	28	18	27	21	26	16
East North Central	29	16	26	10	33	8	23	17	16	[4] 18
West North Central	26	24	26	14	40	20	22	28	14	[5] 22
South Atlantic	80	31	91	45	114	20	76	47	65	27
East South Central	248	153	165	87	129	117	145	20	140	31
West South Central	69	38	77	71	47	17	21	71	26	29
Mountain	82	36	36	36	82	[2] 54	64	54	46	63
Pacific	35	16	21	13	19	18	21	8	16	8

INFLUENZA DEATH RATES

	Sept. 18, 1926	Sept. 17, 1927	Sept. 25, 1926	Sept 24, 1927	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927
95 cities	4	5	6	3	6	[2] 6	4	5	6	[3] 6
New England	0	0	5	0	2	0	0	5	5	2
Middle Atlantic	3	4	3	2	2	4	3	6	4	8
East North Central	3	2	3	1	5	5	2	1	2	[4] 3
West North Central	4	4	8	2	0	8	6	4	11	[5] 2
South Atlantic	6	9	9	11	9	4	6	4	8	7
East South Central	5	0	10	10	10	25	5	10	16	10
West South Central	22	17	22	9	35	22	13	9	13	13
Mountain	0	9	9	0	18	[2] 0	18	45	27	9
Pacific	7	10	7	0	7	7	0	3	11	3

PNEUMONIA DEATH RATES

	Sept. 18, 1926	Sept. 17, 1927	Sept. 25, 1926	Sept 24, 1927	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927
95 cities	53	60	65	59	69	[2] 56	64	65	77	[3] 71
New England	54	39	75	70	87	58	33	81	75	95
Middle Atlantic	51	60	70	70	71	62	76	71	88	72
East North Central	40	53	45	41	59	41	54	58	62	[4] 50
West North Central	51	46	55	25	70	33	63	42	53	[5] 61
South Atlantic	55	77	79	66	66	66	61	57	89	108
East South Central	52	102	88	82	109	87	83	82	52	46
West South Central	115	60	93	69	66	95	88	69	106	69
Mountain	118	99	55	54	155	[2] 72	55	72	118	117
Pacific	53	86	78	65	28	45	53	69	81	83

[2] Denver, Colo, not included.
[3] Fort Wayne, Ind , and Fargo, N. Dak., not included.
[4] Fort Wayne, Ind., not included.
[5] Fargo, N. Dak., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,790	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

CHOLERA ON VESSELS

Steamship "Montreal Maru"—At Muke, Japan, from Chittagong, India—September 20, 1927.—The mail steamship *Montreal Maru*, from Chittagong, Bengal, India, arrived at Muke, Japan, September 20, 1927, infected with cholera.

Steamship "Tabaristan"—At Basra—October 6, 1927.—The cargo steamship *Tabaristan*, from Basra, Iraq, arrived at Suez, Egypt, October 6, 1927, with history of a cholera case in a coolie employed on the vessel. The patient was landed at Basra, where anticholera vaccination was carried out.

THE FAR EAST

Report for week ended October 8, 1927.—The following report for the week ended October 8, 1927, was transmitted by the eastern bureau of the health section of the secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Maritime towns	Plague		Cholera		Small-pox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Iraq: Basra	0	0	1	1	0	0
Persia: Mohammerah [1]	0	0	0	0	0	0
British India.						
Bombay	----	2	----	2	0	0
Negapatam	----	0	----	0	1	1
Madras	----	0	----	3	1	0
Bassein	----	1	----	0	0	0
Rangoon	----	4	----	1	8	1
Siam: Bangkok	1	1	2	0	0	0
Dutch East Indies. Banjermasin	0	0	0	0	9	1

Maritime towns	Plague		Cholera		Small-pox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
French Indo-China:						
Saigon and Cholon	0	0	5	0	0	0
China:						
Amoy	0	0	4	----	0	0
Shanghai (Int. S.)	0	0	----	2	0	0
Chinwangtao	0	0	6	3	0	0
Macao	0	0	----	1	0	0
Japan: Moji	0	0	0	0	1	0

[1] An outbreak of cholera is reported at Lingah.

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Aden Protectorate.—Perim, Kamaran, Aden.

Arabia.—Bahrein.

Persia.—Bender-Abbas, Mohammerah, Bushire.

India.—Karachi, Chittagong, Cochin, Tuticorin, Vizagapatam, Moulmein.

Portuguese India.—Nova Goa.

Federated Malay States.—Port Swettenham.

Straits Settlements.—Singapore, Penang.

ASIA—continued

Dutch East Indies.—Batavia, Semarang, Cheribon, Padang, Belawan-Deli, Tarakan, Palembang, Menado, Sabang, Surabaya, Makassar, Balikpapan, Samarinda.

Sarawak.—Kuching.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

Portuguese Timor.—Dilly.

ASIA—continued

Philippine Islands.—Iloilo, Jolo, Cebu, Zamboanga, Manila.

French Indo-China.—Tourane.

China.—Tsingtao, Tien-Tsin.

Hong Kong.

Wei-hai-wei.

Formosa.—Keelung, Takao.

Chosen.—Chemulpo, Fusan.

Manchuria.—Yingkow, Antung, Harbin, Mukden, Changchun, Newchwang.

Kwantung.—Port Arthur, Dairen.

Japan.—Nagasaki, Yokohama, Niigata, Shimonoseki, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns, Port Moresby.

New Guinea.—Port Moresby.

New Britain Mandated Territory.—Rabaul and Kokopo.

New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.

Western Samoa.—Apia.

New Caledonia —Noumea.

AUSTRALASIA AND OCEANIA—continued

Fiji.—Suva.

Hawaii.—Honolulu.

Society Islands.—Papeete.

AFRICA

Egypt.—Alexandria, Port Said, Suez.

Anglo-Egyptian Sudan.—Port Sudan, Suakin.

Eritrea.—Massaua.

French Somaliland.—Djibouti.

British Somaliland.—Berbera.

Italian Somaliland.—Mogadiscio.

Kenya.—Mombasa.

Zanzibar.—Zanzibar.

Tanganyika.—Dar-es-Salaam.

Seychelles.—Victoria.

Portuguese East Africa.—Mozambique, Beira, Lourenço-Marques.

Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.

Mauritius —Port Louis.

Reunion.—St. Denis.

Madagascar.—Majunga, Diego-Suarez, Tamatave.

AMERICA

Panama —Colon, Panama.

Reports had not been received in time for publication from:

Ceylon.—Colombo.

India.—Calcutta.

French Indo-China.—Haiphong.

Dutch East Indies.—Pontianak.

China.—Canton.

Union of Socialist Soviet Republics.—Vladivostok.

Belated information:

Week ended September 24: *Pondicherry* and *Karikal*—Nil.

CANADA

Communicable diseases—Week ended October 15, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases from seven Provinces of Canada for the week ended October 15, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever				1	1			2
Influenza					3			3
Poliomyelitis		2		3		1	22	28
Smallpox	1			26		8	5	40
Typhoid fever		14	16	30	4	3	1	68

Communicable diseases—Quebec—Week ended October 15, 1927.—The bureau of health of the Province of Quebec reports cases of certain communicable diseases for the week ended October 15, 1927, as follows:

Disease	Cases	Disease	Cases
Chicken pox	14	Scarlet fever	79
Diphtheria	83	Tuberculosis	50
German measles	3	Typhoid fever	16
Influenza	1	Whooping cough	8
Measles	23		

Typhoid fever—Montreal—January 2–October 22, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	June 4, 1927	239	37
Jan. 15, 1927	4	3	June 11, 1927	128	36
Jan. 22, 1927	1	2	June 18, 1927	86	18
Jan. 29, 1927	3	1	June 25, 1927	75	23
Feb. 5, 1927	1	0	July 2, 1927	66	21
Feb. 12, 1927	0	0	July 9, 1927	52	10
Feb. 19, 1927	1	2	July 16, 1927	39	4
Feb. 26, 1927	1	1	July 23, 1927	22	9
Mar. 5, 1927	9	1	July 30, 1927	23	10
Mar. 12, 1927	203	4	Aug. 6, 1927	16	5
Mar. 19, 1927	383	14	Aug. 13, 1927	20	5
Mar. 26, 1927	568	22	Aug. 20, 1927	14	4
Apr. 2, 1927	649	48	Aug. 27, 1927	8	3
Apr. 9, 1927	386	40	Sept. 3, 1927	27	0
Apr. 16, 1927	175	38	Sept. 10, 1927	17	0
Apr. 23, 1927	125	43	Sept. 17, 1927	13	2
Apr. 30, 1927	105	23	Sept. 24, 1927	6	3
May 7, 1927	106	19	Oct. 1, 1927	18	1
May 14, 1927	367	16	Oct. 8, 1927	14	1
May 21, 1927	770	26	Oct. 15, 1927	5	1
May 28, 1927	353	38	Oct. 22, 1927	3	1

EGYPT

Communicable diseases—Two weeks ended September 2, 1927.—During the two weeks ended September 2, 1927, communicable diseases were reported in Egypt as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Cerebrospinal meningitis	1		Typhoid fever	199	
Influenza	139		Typhus fever	7	1
Smallpox	3	1			

GIBRALTAR

Leprosy—1926.—During the year 1926 three cases of leprosy were reported at Gibraltar, of which one case occurred in a resident of the Spanish town of Linares, who, while receiving treatment as an out-patient of a hospital at Gibraltar, was found to be suffering from

leprosy; one in a native of the Island of Malta, resident for 50 years at Gibraltar, and one who had been an inmate of a charitable institution at Gibraltar for three years previously. The two first-noted cases were removed for treatment, one to a leper institution at Malaga, the patient last referred to remaining at Gibraltar. The only previous record of leprosy at Gibraltar was for the year 1909, when the medical officer of health reported three cases, two being in Spaniards, and stated them to have been the only cases at Gibraltar observed for a period of 27 years.

Tuberculosis.—Pulmonary tuberculosis was reported during the year with 40 cases, an increase of 12 over the number reported for the preceding year. The civil population of Gibraltar was estimated at 16,150.

GREAT BRITAIN

Cancer—Tuberculosis—Housing conditions—Hull, England—Year, 1926.—Reports on health conditions at Hull, England, for the year 1926, show increase of mortality from cancer, with 408 deaths from the disease in 1926, compared with 345 in 1925, 364 in 1924, and 297 in 1923. Tuberculosis showed the lowest death rate on record, being less than one-half that recorded in 1918, that year being noted as one of heavy mortality as a result of the war conditions. The death rate from all diseases was stated to be 12.8 per 1,000 of the population for the year under report.

Housing.—Progress was reported in the erection of new houses by the corporation with a total of 1,006 completed houses. Population, 294,600.

GREECE

Pneumonic influenza—Saloniki—August 30–October 3, 1927.—During the period August 28 to October 3, 1927, pneumonic influenza was reported at Saloniki, Greece, with 80 deaths.

ITALY

Pellagra—Florence—September 25–October 1, 1927.—During the week ended October 1, 1927, three cases of pellagra were reported at Florence, Italy.

Smallpox—Florence—September 18–24, 1927—Correction.—The case of smallpox quoted as occurring at Florence during the week ended September 24, 1927,[1] was corrected under date of October 1, 1927, to read "Chicken pox."

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[1] Public Health Reports, Oct. 21, 1927, p. 2630, and Oct. 28, 1927, p. 2696.

VIRGIN ISLANDS

Communicable diseases—September, 1927.—During the month of September, 1927, communicable diseases were reported in the Virgin Islands of the United States as follows:

Island and disease	Cases	Remarks
St. Thomas and St. John:		
Gonorrhea	2	
Pellagra	1	
Syphilis	8	Secondary, 3 cases.
Tuberculosis	1	Chronic pulmonary.
St. Croix:		
Syphilis	3	Secondary.
Uncinariasis	4	Necator Americanus.

YUGOSLAVIA

Communicable diseases—September, 1927.—During the month of September, 1927, communicable diseases were reported in Yugoslavia as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	102	16	Measles	264	2
Cerebrospinal meningitis	4	2	Poliomyelitis	3	
Diphtheria	230	29	Scarlet fever	845	138
Dysentery	214	22	Tetanus	37	15
Lethargic encephalitis	2	2	Typhoid fever	877	80

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the lists of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended November 4, 1927[1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Tientsin	Sept. 11-17	5		Reported by mission hospitals. Stated to be present in Chinese population.
India				Aug. 28-Sept. 3, 1927: Cases, 11,180; deaths, 5,559.
Bombay	Sept 11-17	1		
Calcutta	do	20	5	
Madras	Sept. 18-24	7	7	
Rangoon	Sept. 17-24	2	2	
Indo-China (French):				
Saigon	Aug. 27-Sept. 2	1		
Siam				Sept. 4-10, 1927: Cases, 5; deaths, 3. Apr. 1-Sept. 10, 1927: Cases, 712; deaths, 480.
Bangkok	Sept. 4-10	1		
On vessels:				
S. S. Montreal Maru	Sept. 20			At Muke, Japan, from Chittagong, India; cholera infected.
S. S. Tabaristan	Oct. 6	1		Case in coolie removed at Basra.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Ceylon:				
Colombo	Sept 11-17	1	1	
India				Aug. 28-Sept. 3, 1927: Cases, 403; deaths, 216.
Bombay	Sept. 11-17	1	1	
Madras Presidency	Aug. 28-Sept. 3	144	76	
Rangoon	Sept. 11-17	4	4	

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended November 4, 1927—Continued

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria:				
Oran	Oct. 1-10	6		
Canada	Oct. 9-15			Cases, 40.
Alberta	do	5		
Manitoba—				
Winnipeg	Oct. 16-22	1		
Nova Scotia	Oct. 9-15	1		
Halifax	Oct 8-15	1		
Ontario	do	23		
Ottawa	Oct. 16-22	26		
Toronto	Oct. 9-15	1		
Saskatchewan	do	8		
Moose Jaw	Oct 18	2		
China:				
Manchuria—				
Fushun	Sept 11-17	1		
Egypt	Aug 27 Sept. 2	3	1	
Great Britain:				
England and Wales	Oct 2 8			Cases, 149.
Leeds	do	1		
Manchester	do	1		
Sheffield	do	3		
India				Aug. 28-Sept. 3, 1927: Cases, 1,456; deaths, 397.
Bombay	Sept 11-17	1	1	
Calcutta	do	10	5	
Madras	Sept 18-24	2	1	
Rangoon	Sept 11 17	1		
Mexico:				
Acapulco	Aug 28-Sept. 17	2	2	
Persia:				
Teheran	June 23-July 23		2	
Portugal:				
Lisbon	Sept. 25-Oct 8	6		
Siam.				
Bangkok				Sept. 4-10, 1927 Cases, 3; deaths, 1 Apr. 1-Sept. 10, 1927: Cases, 250, deaths, 7.

TYPHUS FEVER

Place	Date	Cases	Deaths
Argentina:			
Rosario	Aug 1-31		1
Bulgaria:			
Sofia	Sept 24-30	8	
Chile.			
Antofagasta	Sept 25-Oct. 1		1
China:			
Manchuria—			
Harbin	Aug. 15-21	2	
Egypt	Aug 20-Sept 2	7	1
Palestine.			
Jaffa	Sept. 27-Oct 3	1	

Reports Received from June 25 to October 28, 1927

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-Sept 10	70	11	
Canton	May 1-Sept. 10	74	39	
Foochow	July 24-Sept 10			Present
Hong Kong	July 17-Sept. 3	3	3	
Kulangsu	June 21	1		
Shanghai	June 19-25	2		
Do	July 31-Sept. 17		104	In international settlement and French concession.
Swatow	May 15-Sept. 10	138	13	
Tientsin	Aug 27-Sept. 10	4		

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 28, 1927—Continued

CHOLERA—Continued

Place	Date	Cases	Deaths	Remarks
India	Apr. 17-Aug. 13			Cases, 148,274; deaths, 82,048.
Bombay	May 8-Sept. 10	126	57	
Calcutta	do	688	410	
Karachi	May 29-June 4	1	1	
Madras	June 19-Sept. 17	812	427	
Rangoon	May 8-Aug. 13	18	14	
India, French settlements in	Mar. 30-July 16	171	109	
Indo-China (French)	Apr. 1-Aug. 10			Cases, 13,640.
Annam	do	2,936		
Cambodia	do	335		
Cochin-China	do	1,519		
Saigon	June 4-July 21	10	4	
Laos	July 11-Aug 10	137		
Tonkin	Apr. 1-Aug. 10	9,713		
Iraq:				
Baghdad	July 24-30	29	18	
Basra	July 17-Sept. 17	383	288	
Japan:				
Yokohama	July 31-Aug 6	1	1	
Persia:				
Abadan	July 24-Aug. 13	215	183	
Ahwaz	July 31-Aug. 13	20	13	
Minab	Aug. 7-13		23	
Mohammerah	July 17-Aug. 27	194	155	
Nasseri	July 19-31		10	
Philippine Islands:				
Manila	July 17-Aug. 27	2		
Bulacan Province	June 7-July 8	3	2	
Leyte Province—				
Barugo	June 29	1	1	
Carigara	June 23	1	1	Final diagnosis not received.
Palo	May 18	1		
Siam	May 1-Sept. 3			Cases, 320; deaths, 195.
Bangkok	do	46	14	
On vessel:				
S. S. Adrastus	Reported Aug. 6	1	1	At Yokohama, Japan.
S. S. Morea	Sept. 2			At Hong Kong
S. S. War Mehtar (oil tanker).	Aug. 4	1	1	At Saifagha, Egypt.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Algeria.				
Algiers	Aug. 21-31	1		
Oran	Aug. 21-Sept. 10	5	4	
Argentina	Jan. 1-Aug. 2			Cases, 80; deaths, 44.
Buenos Aires	Apr. 10-May 7	4	3	
Cordoba	Jan. 11-Aug. 6	52	29	
Corrientes	June 1	1	1	
Entre Rios	Mar. 29-Aug. 13	8	1	
Santa Fe	Apr. 28-May 16	4	3	
Territory—				
Chaco—				
Barranqueras	May 29	2	2	
Formosa	June 25	3	2	
Pampa	July 27-Aug. 2	4		
Rio Negro	Aug. 6	1		
City—				
Merou	Reported July 14			Present.
Rosario	May 7	1	1	
Santa Fe	May 16	4	2	
Azores:				
St. Michaels Island	May 15-Aug. 27	6		
Ribeira Grande	June 12-18	1		
Brazil:				
Sao Paulo	June 3-9	1	1	
British East Africa:				
Kenya	Apr. 24-July 31	73	14	
Mombassa	July 24-30	1	1	
Nairobi	May 22-28	6		
Tanganyika	Mar. 29-May 28		37	
Do	July 24-Aug. 6		10	
Uganda	Jan. 1-Feb. 28	138	121	
Do	Mar. 27-June 18	306	300	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 28, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Canary Islands:				
Laguna district—				
Tejina	June 17	1		
Las Palmas	Oct. 8	4		
Ceylon:				
Colombo	May 1-Sept. 3	19	12	Plague rats, 4.
China:				
Amoy	July 3-23			Present in surrounding country.
Mongolia	Reported Oct. 11		200	Approximate.
Tientsin	Aug. 14-20	2		
Tungliao	Reported Oct. 15			Outbreak.
Ecuador:				
Guayaquil	June 1-Aug. 31	7		Rats taken, 72,410; found infected, 45.
Egypt:				
Alexandria	June 4-Sept. 2	4		
Beni-Souef	June 4-July 13	5	2	
Biba	June 4-10	1		At Nama.
Dakhalia	June 21-July 9	6	1	
Minia	Aug. 8-9	4		
Port Said	June 21-July 21	4	1	
Suez	Sept. 4	1		
Tanta district	June 4-10	1		
Greece	May 1-June 30	4	3	
Athens	June 1-Aug. 29	3		Including Piraeus.
Mytilene	Aug. 9	1		
Patras	May 30-Oct. 1	9	2	
Hawaii Territory:				
Hamakua	July 15-Aug. 30			2 plague rodents.
Honokaa	May 17-23	2	2	
Kukuihaele	Aug. 12-17	1	1	Do.
Paauilo	July 26-Aug. 1		4	
India	Apr. 17-July 16			Cases, 22,523; deaths, 8,580.
Bombay	May 8-Sept. 10	99	84	
Calcutta	Aug. 21-Sept. 3	18	10	
Madras	May 1-Aug. 20	982	430	
Rangoon	May 8-Sept. 3	66	60	
Indo-China (French)	Apr. 1-Aug. 10	50		
Kwang-Chow-Wan	May 21-July 31	73		
Iraq:				
Baghdad	Apr. 8-May 28	12	1	
Java:				
Batavia	May 1-Sept. 10	275	276	Province.
East Java and Madura	May 22-July 16	28	27	
Pasoeroean Residency	May 9			Outbreak reported at Nagdiwano
Surabaya	Apr. 17-Aug. 27	70	69	
Madagascar				Mar. 16-Apr. 30, 1927: Cases, 256; deaths, 135
Province—				
Ambositra	Mar. 16-July 31	99	92	
Antisrabe	Mar. 16-May 15	8	8	
Miarinarivo (Itasy)	Mar. 16-July 31	69	63	
Moramanga	May 16-July 31	28	27	
Tananarive	Mar. 16-July 31	233	204	
Tananarive Town	Mar. 16-June 30	22	20	
Mauritius:				
Port Louis	May 1-June 30	1	1	
Nigeria	Mar. 1-May 31	228	177	
Peru	Apr.-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	Apr. 1-July 31	13	8	
Lima City	Apr. 1-30	5	1	
Senegal	May 23-Sept. 25			Cases, 1,030; deaths, 606.
Baol	June 2-Oct. 2	179	95	
Cayor Frontier	July 4-Oct. 2	917	530	
Dakar	June 20-Oct. 2	147	94	
Facel	July 6	17	8	
Guindel	June 20-26	11	2	
Louga district	Sept. 18-25	5	4	
M'Bour	July 6-10	28	23	
Medina	June 13-19	2	2	
Pout	July 4-10	1		
Rufisque	May 23-Sept. 25	223	167	
Thies district	do	34	15	
Tivaouane	June 2-July 17	50	32	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 28, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Siam	Apr. 1-Aug. 27			Cases, 10; deaths, 7
Bangkok	May 8-June 11	2	1	
Syria:				
Beirut	June 11-July 10	3		
Tunisia	Apr. 21-July 10	144		
Tunis	July 25-Aug. 1	1		
Turkey.				
Constantinople	May 13-19	1		
Do	Sept 18-24	1		
Union of South Africa:				
Cape Province—				
Maraisburg district	May 1-14	2	2	Native.
Orange Free State—				
Edenburg district	July 17-26	3	3	Natives; on farm.
Rouxville district	July 24-Aug. 6	2	2	
On vessel:				
S. S. Avoroff	June 24-30	1		Greek warship at port of Athens.
S. S. Capafric	Aug. 23	3	1	At Duala, French Cameroons, from Nigeria.
S. S Elcano	Aug. 19	1		At Piraeus, Greece.
S. S. Madonna	Aug 24	1		At Dakar, Senegal, from ports south.
S. S. Ransholm	Aug. 5	3		At Gefle, Sweden, from Rufisque, Senegal.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-July 31			Cases, 882.
Algiers	May 11-June 30	8		
Oran	May 21-Sept. 30	63		
Angola	June 1-July 31	45		
Arabia.				
Aden	July 17-Aug. 1	2	1	
Brazil				
Bahia	Aug. 7-13	1		
Porto Alegre	July 1-Aug 31	8		
Rio de Janeiro	May 22-Sept. 17	23	19	
British East Africa.				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 29-June 18	2	22	
Zanzibar	Apr. 1-May 31	19	7	
British South Africa:				
Northern Rhodesia	Apr. 30-Sept 9	179	3	
Canada	June 5-Oct. 8			Cases, 595.
Alberta	June 12-Oct. 8			Cases, 119.
Calgary	June 12-Aug. 27	9		
British Columbia—				
Vancouver	May 23-Sept. 4	4		
Manitoba	June 5-Oct 8			Cases, 40.
Winnipeg	June 12-Oct. 8	22		
Nova Scotia	Sept. 11-17	1		
Ontario	June 5-Oct. 8			Cases, 247.
Ottawa	June 12-Oct. 15	179		
Sarnia	Aug. 7-13	1		
Toronto	June 19-Oct. 8	14		
Windsor	Oct. 2-15	9		
Quebec	June 19-Aug. 27	15		
Saskatchewan	June 12-Oct. 1			Cases, 132.
Moose Jaw	Aug. 14-Sept. 24	21		
Regina	July 17-Oct. 8	15		
Ceylon	May 1-7			Cases, 3; deaths, 1.
Colombo	July 31-Aug. 6	1	1	
China				
Amoy	May 8-28	1		
Do	July 3-16			Present in surrounding country.
Antung	July 4-31	3		
Chefoo	May 8-14			Present.
Foochow	May 8-Sept. 10			Do.
Hong Kong	May 8-Sept. 3	22	20	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 28, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
China—Continued.				
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-July 30	8		
Dairen	May 2-July 3	10	5	
Fushun	May 15-July 30	10		
Harbin	June 13-July 10	4		
Kaiyuan	July 3-9	2		
Mukden	May 22-July 30	6		
Pensihu	July 3-9	1		
Ssupingkai	May 8-July 9	3		
Tientsin	May 8-Sept 10	18	4	
Chosen	Feb 1-June 30			Cases, 507; deaths, 205.
Chinnampo	Apr 1-May 31	2		
Fusan	Apr 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr 1-30	1		
Curaçao	May 29-June 4	1		Alastrim.
Ecuador:				
Guayaquil	June 1-Aug 31	4		
Egypt	May 7-July 29			Cases, 21; deaths, 3.
Alexandria	May 21-June 17	4	1	
Cairo	Jan 22-Apr 15	14	3	
France	Apr 1-July 31			Cases, 201.
Lille	July 24-30	1		
Paris	May 21-July 31	14	2	
Gold Coast	Mar 1-June 30	41	7	
Great Britain:				
England and Wales	May 22-Oct. 1			Cases, 3,337.
Birmingham	Aug 14-Sept 30	2		
Bradford	May 29-June 11	2		
Cardiff	June 19-July 2	4		
Leeds	July 17-Oct 1	16		
Liverpool	July 17-30	1		
London	May 15-June 18	2		
Newcastle upon Tyne	June 12-Oct 1	6		
Sheffield	June 12-Sept 24	26		
Stoke-on-Trent	Aug. 21-27	1		
Scotland—				
Dundee	May 29-Sept 3	6		
Greece	June 1-30	14		
Saloniki	July 12-Aug 15		2	
Guatemala:				
Guatemala City	June 1-30		9	
Guinea (French)	June 4-10	9		
India	Apr 17-Aug. 13			Cases, 72,048; deaths, 19,005.
Bombay	May 28-Sept 10	242	157	
Calcutta	May 8-Sept 10	400	308	
Karachi	May 15-Aug 6	10	5	
Madras	May 22-Sept 17	29	7	
Rangoon	May 8-Sept. 3	185	156	
India, French Settlements in	Mar 20-June 18	174	111	
Indo-China (French)	Mar 21-Aug. 10			Cases, 318.
Saigon	May 14-Aug 19	3	1	
Iraq:				
Baghdad	Apr 10-Sept. 4	3	1	
Basra	Apr. 10-Sept. 17	5	4	
Italy	Apr. 10-May 21	13		
Rome	June 13-July 10	2		
Jamaica	May 29-Sept. 24	37		Reported as alastrim.
Japan	Apr 3-May 7			Cases, 19.
Nagasaki City	June 20-Aug. 14	26	7	
Taiwan Island	May 21-31	1		
Java:				
Batavia	May 22-Aug. 20	7		
East Java and Madura	Apr 24-Aug 20	17		
Latvia	Apr 1-30	1		
Mexico	Mar 1-May 31			Deaths, 557.
Durango	June 1-30		1	
Monterey	July 1-31	6	4	
San Luis Potosi	May 29-Aug. 13		11	
Tampico	June 1-July 31	1	2	
Torreon	Aug. 7-Oct 1		2	
Morocco	Apr 1-July 31	207		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 28, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in 2 localities.
Pasir Residency	Apr 30-May 6			Epidemic outbreak.
Samarinda Residency	May 21-27			Do.
Nigeria	Mar. 1-June 30	2,352	570	
Paraguay				
Asuncion	July 10-23		2	
Persia.				
Teheran	Feb 21-June 22		14	
Poland	Apr 10-Aug. 6	20	2	
Portugal.				
Lisbon	May 29-Sept 24	20	1	
Oporto	Sept. 3-9	1		
Senegal.				
Medina	July 4-10	7		
Siam	Apr 1-Sept. 3			Cases, 246; deaths, 66.
Bangkok	May 1-July 23	13	7	
Spain·				
Madrid	Aug 1-31		1	
Valencia	May 29-June 4	3		
Do.	Sept 25-Oct. 1	1		
Straits Settlements	June 12-18			Cases, 3.
Singapore	Apr 1-June 18	7	2	
Sumatra				
Medan	June 5-Aug 20	3		
Switzerland				
Berne	June 26-July 2	1		
Syria				
Damascus	Aug 11-31	3		
Tunisia	Apr 1-June 10			Cases, 10.
Tunis	June 1-10	1		
Union of South Africa				
Cape Province	July 7 Aug. 20			Outbreaks.
Elliott district	May 11-June 10			Do
Idutywa district	July 3-9			Do.
Kalanga district	May 11-June 10.			Do.
Mount Ayliffe district	July 31-Aug 6			Do.
Orange Free State	Aug 7-13			Do.
Transvaal—				
Barberton district	May 1-7			Do.
Venezuela				
Maracaibo	July 12-Sept. 12		3	

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
geria	Apr. 21-July 20			Cases, 399; deaths, 39.
Algiers	May 11-Sept 20	32		
Oran	May 21-Aug. 31	34		
ilgaria	Mar 1-July 10			Cases, 226; deaths, 20.
Sofia	June 4-Aug. 5	2		
ıile				
Antofagasta	Apr. 16-May 31	1		
Concepcion	May 29-June 4		1	
La Calera	Apr. 16-May 31	1		
Ligua	Mar. 16-31.	2		
Puerto Montt	Apr. 16-May 31	1		
Santiago	do	5	1	
Talcahuano	July 10-16		1	
Valparaiso	Apr. 16-Sept. 3	5	3	
ıina				
Manchuria—				
Harbin	July 25-31	3		
Mukden	May 29-June 4	1		
Tientsin	July 10-16	1		
ıosen	Feb. 1-June 30			Cases, 721; deaths, 60.
Chemulpo	May 1-Aug. 31	3		
Gensan	do	4		
Seoul	Apr. 1-Aug. 31	35	3	
echoslovakia	do			Cases, 55.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 28, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Egypt	May 28–July 29			Cases, 120; deaths, 18.
Alexandria	May 21–Aug. 5	13	5	
Cairo	Jan. 15–June 24	42	16	
Port Said	Sept 24–30	1		
Estonia	Apr. 1–June 30			Cases, 5.
Greece	June 1–30	2		
Athens	June 1–July 31		9	
Guatemala.				
Guatemala	Aug. 25–31		1	
Iraq:				
Baghdad	Apr. 24–30	1		
Irish Free State:				
Cork County	July 3–9	1		In urban district.
Latvia	Apr. 1–July 31	32		
Lithuania	Feb. 1–July 31	347	42	
Mexico	Feb. 2–May 31			Deaths, 140.
Mexico City	May 29–Sept 24	59		Including municipalities in Federal district.
San Luis Potosi	July 31–Aug 6		1	
Morocco	Apr 1–Aug 20	952		
Palestine	May 24–Sept 26			Cases, 29.
Haifa	May 24–Aug 29	8		
Jaffa	Aug. 2–15	2		
Jerusalem	June 28–Aug. 15	3		
Mahnaim	May 17–23	1		In Safad district.
Nazareth	July 19–25	1		
Safad	May 17–Aug 8	10		
Peru				
Arequipa	Apr 1–30		1	
Poland	Apr 10–Sept 3	1,100	100	
Portugal				
Lisbon	May 29–June 4	1		
Oporto	Aug 20–27	1		
Rumania	Apr 3–July 23	956	64	
Spain				
Seville	Aug 19–25		2	
Syria				
Aleppo	Sept. 11–17	2		
Tunisia	Apr 22–July 20			Cases, 158.
Tunis	July 5–Aug 21	2		
Turkey				
Constantinople	May 13–19		2	
Union of South Africa	Apr 1–30			Cases, 55, deaths, 8, native. In Europeans, cases, 2.
Cape Province	Apr 1–Aug 27	42	5	
Albany district	June 5–11			Outbreaks
East London	May 22–28	1		Do
Glen Gray district	May 1–7			Do
Kentani district	June 26–July 2			Do.
Port Elizabeth	Aug 7–13	1		
Qumbu district	May 1–7			Do.
Umzimkulu district	June 26–July 2			Do.
Natal	Apr 1–Aug 6	7	3	
Impendhle district	June 5–11			Do.
Orange Free State	Apr 1–July 23	5		
Transvaal	Apr 1–30	1		
Johannesburg	July 3–Aug. 20	19	5	
Yugoslavia	May 1–Aug 31			Cases, 24, deaths, 5.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Ashanti:				
Obuasi	Aug. 6	1	1	
Dahomey (West Africa):				
Porto Novo	July 1	1	1	In Syrian woman.
Gold Coast	Apr. 1–June 30	60	22	
Do	Aug. 4	2		
Ivory Coast	July 29	1	1	
Liberia:				
Monrovia	May 29–July 8	4	5	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to October 28, 1927—Continued

YELLOW FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Senegal:				
Dakar	July 9	1		
Do	Aug. 8	2	2	
Do	Sept. 17			Present.
Geoul	Sept. 26–Oct. 2	1	1	
Island of Goree	Aug. 22–Sept. 4	2	2	
Khombole	Aug. 1–Oct. 2	4	1	
Louga	Sept. 26–Oct. 2	1	1	
M'Bour	May 27–June 19	5	5	
Ouakam	June 2–Aug. 14	4	2	
Pout	Sept. 19–25	1	1	
St. Louis	Aug. 1–Oct. 2	3	3	
Thies	July 10	1	1	In European.
Do	Sept. 12–Oct. 2	4	4	
Tiaroye	Aug. 22–Sept. 4	1	1	
Tivaouane	May 27–Sept. 11	6	5	
Togoland:				
Meiatza	Aug. 15–21	1	1	

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UNITED STATES PUBLIC HEALTH SERVICE

HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

ASST. SURG. GEN. R. C. WILLIAMS, *Chief of Division*

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PUBLIC HEALTH REPORTS

VOL. 42 NOVEMBER 11, 1927 NO. 45

PREVALENCE OF POLIOMYELITIS IN THE UNITED STATES

Poliomyelitis is still more prevalent in the United States than it usually is at this time of year, but the number of cases has been decreasing since the second week of September.

Reports of the number of cases of poliomyelitis from 42 States for the week ended October 29, 1927, showed a decrease of 16 per cent from the figures for the preceding week and of 21 per cent from those for the week ended October 15, 1927.

Comparing the reports for the weeks ended October 22 and 29, 1927, Indiana, Missouri, Nebraska, Kansas, and Ohio showed an aggregate increase of 31 cases for the latter week. Eight other States showed increases of a few cases only. The figures for Massachusetts declined from 99 for the week ended October 22 to 66 for the week ended October 29. Pennsylvania reported a decrease from 45 cases to 18.

Reports for the week ended October 29, 1927, and the corresponding week of the years 1925 and 1926, are available from 37 States. These States reported 368 cases for the week in 1927, 61 cases for the corresponding week in 1926, and 101 cases for the week in 1925.

Figures by States are given in the table on pages 2794–95. Reports for the week ended November 5, 1927, will be found on page 2804.

MICROSCOPIC CHANGES OF TULARAEMIA IN THE TICK *Dermacentor andersoni* AND THE BEDBUG *Cimex lectularius*

By Edward Francis, *Surgeon, Hygienic Laboratory, United States Public Health Service*

PART I: TICKS

Ticks play a most important rôle in the transmission of tularaemia from rabbit to man and from rabbit to rabbit, and in the permanent maintenance of the infection in nature. Numerous observations have been made by physicians of the transmission of tularaemia to man in northwestern United States by *Dermacentor andersoni*, and

in southern and southwestern United States by a tick (species undetermined). Parker and Spencer,[1,2] have reported:

(1) That adult wood ticks of the species *Dermacentor andersoni* collected May 19, 1923, from vegetation in Montana and injected into guinea pigs caused acute death of the pigs with typical lesions of tularaemia from which *Bacterium tularense* was isolated on culture medium. (2) That nymphal ticks reared in the laboratory and infected as larvae by feeding on a tularaemia guinea pig caused acute death with typical lesions of tularaemia in a guinea pig on which they fed 247 days after the ingestion of infected blood by the antecedent larvae. (3) That adult ticks reared in the laboratory and infected as larvae caused typical tularaemia in a guinea pig on which they fed 199 days after ingestion of infected blood by the antecedent larvae. (4) That tularaemia was hereditarily transmitted by *Dermacentor andersoni* females to their eggs, larvae, and nymphs, but not to the adults; nymphal infection was demonstrated 208 days after parent female engorgement.

The foregoing observations and experiments have led to a study of the microscopic changes in infected ticks. Ticks were studied only within 30 days after their first infective feed, in smears, cultures, and serial sections of adults infected as adults by feeding on infected guinea pigs. The result has been a demonstration that *Dermacentor andersoni* is a true biological host of tularaemia—that it harbors the infection not only in its feces, but also in the epithelial cells of its digestive tract and Malpighian tubes, and in its coelomic fluid.

Method of transmission.—The absence of demonstrable organisms in the salivary glands and their constant presence in the feces leads to the belief that transmission is due to the mechanical entrance of feces through the biting wound.

Source of uninfected ticks.—Two lots of uninfected adult ticks were furnished by R. R. Parker, special expert, United States Public Health Service, Hamilton, Mont., and were received in July, 1924, at the Hygienic Laboratory, Washington, D. C., where infection with tularaemia was begun on August 1, 1924.

Lot 1988 K: This lot of 55 uninfected adults had been reared by Doctor Parker in his laboratory and were descended from an engorged female collected in Montana, May 15, 1923, from a cow "down with ticks." In August, 1923, the larvae, after feeding on a normal Belgian hare, molted to nymphs and later the nymphs were proved to be free from tularaemia by injection into guinea pigs. In May, 1924, the flat nymphs were used to infest a normal Belgian hare, and in July, 1924, they began molting to adults.

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[1] Parker, R. R., Spencer, R. R., and Francis, Edward: Tularaemia infection in ticks of the species *Dermacentor andersoni* Stiles in the Bitterroot Valley, Montana. Pub. Health Rep. 39: 1057-1073 (May 9, 1924).

[2] Parker, R. R., and Spencer, R. R.: Hereditary transmission of tularaemia infection by the wood tick *Dermacentor andersoni* Stiles. Pub. Health Rep., 41: 1403-1407 (July 9, 1926).

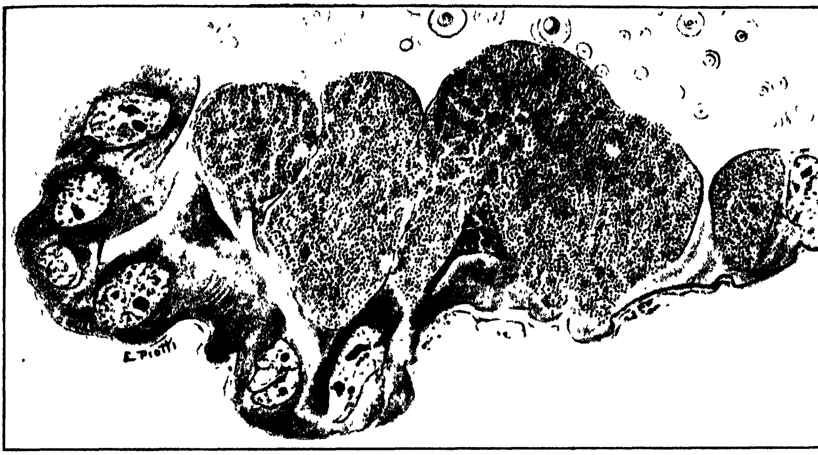

Fig 1.—Section of rectal sac of tick *Dermacentor andersoni* showing epithelium distended with *Bacterium tularense*

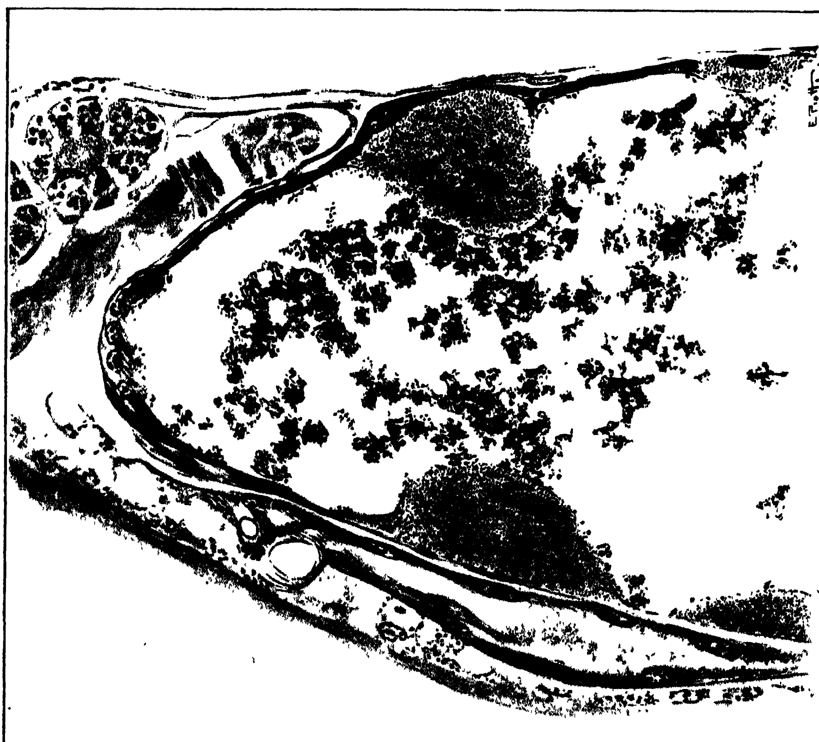

Fig. 2.—Section of gut of bug *Cimex lectularius* showing epithelium distended with *Bacterium tularense*

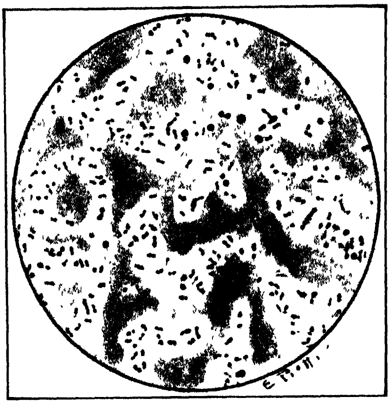

Fig. 3 —Smear of body fluid of leg of tick *Dermacentor andersoni* showing *Bacterium tularense*

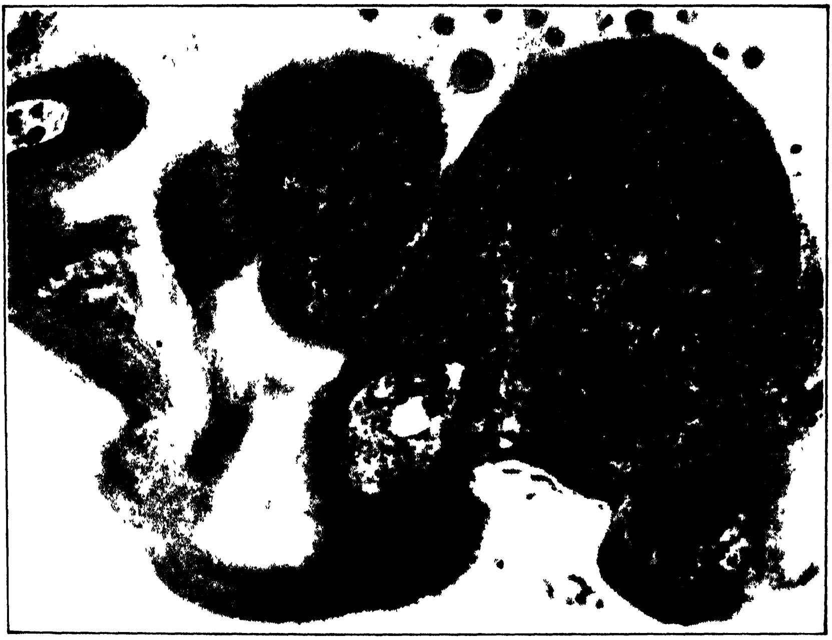

Fig. 4 —Section of rectal sac of tick *Dermacentor andersoni* showing epithelium distended with *Bacterium tularense*. (A M.M. 42260)

Fig. 5.—Low power section of gut of bug *Cimex lectularius* showing epithelium distended with *Bacterium tularense* (A.M.M. 42259)

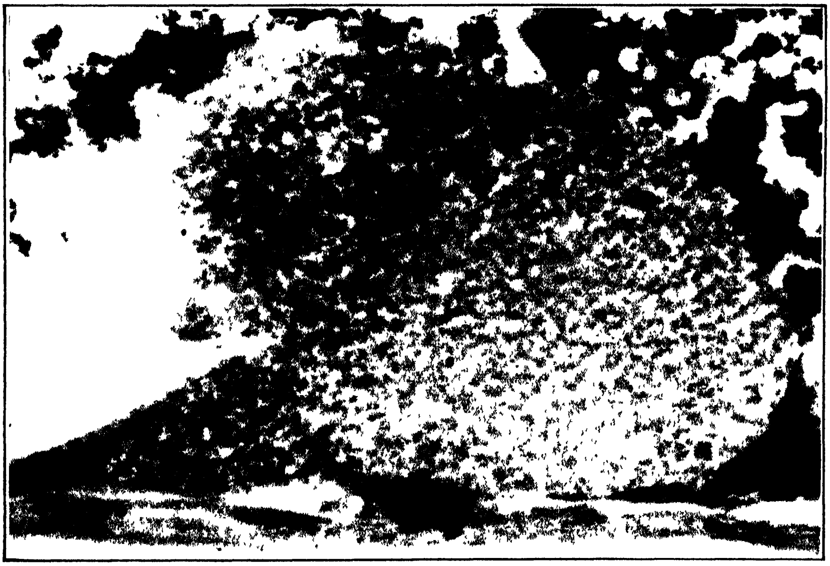

Fig. 6.—High power magnification of cell at bottom of Fig. 5. (A.M.M. 42254)

Fig. 7.—Section of Malpighian tube of tick *Dermacentor andersoni* showing *Bacterium tularense* in epithelium

LOT OF WILD TICKS: This lot of 100 wild adults was collected from nature in Montana by Doctor Parker, and it is within the bounds of possibility that some of them may have already been infected with tularaemia before being experimentally infected at the Hygienic Laboratory.

Method of infecting ticks.—Infection of ticks was accomplished in August, 1924, by feeding the two lots of adults on guinea pigs which had been infected either by subcutaneous inoculation of a virulent culture of *Bacterium tularense* or by being rubbed on the abraded skin of the abdomen with the spleen of a guinea pig dead from tularaemia. The life of an infected guinea pig is three to five days, and bacteraemia is greatest in its dying hours.

Ticks were transferred in a tangled mass from a glass vial to a piece of coarse-meshed linen gauze, 4 inches square, and immediately covered with a brass gauze capsule 1½ inches in diameter. The linen gauze was then drawn tightly around the wire capsule and tied with a string. The ticks, thus confined, were applied to a clipped area on the front of the thorax of an infected guinea pig, where they fed through the linen gauze. The capsule was held firmly against the skin of the pig by a band of adhesive tape 3 inches wide which encircled capsule and pig.

Ticks were applied to a guinea pig 24 hours after inoculation and were allowed to remain until the death of the pig. The capsule containing the ticks was then removed and applied to a second pig which had been inoculated 24 hours previously and were again allowed to remain until the death of the pig. Ticks were in this way applied to a series of five or six infected pigs within a period of about three weeks in order to insure maximum infection.

Infection of coelomic fluid.—As ticks reached engorgement, their body fluid was examined in smears for the presence of *Bacterium tularense* preliminary to dissection. No tick was dissected until its body fluid showed organisms in a stained smear. On clipping the terminal joint of a leg with scissors, the body fluid welled up and was collected with a capillary pipette and transferred to a slide and stained. If no organisms were found, the tick was again applied to an infected pig. If organisms were found, the fluid was cultured and the tick was dissected, fixed, embedded, sectioned serially, and stained in Giemsa solution. One can usually predict by the color of the body fluid whether organisms will be found in smears, because normal body fluid is straw colored and clear, but infected coelomic fluid is distinctly turbid and milky in color and shows myriads of coccoidal and bacillary organsims. (See fig. 3.)

Cultures of coelomic fluid.—Pure cultures of *Bacterium tularense* were readily obtained by transfer of a drop of a milky body fluid to coagulated egg yolk medium by means of a capillary pipette. Growth

became abundant after incubation at 37° for 24 hours. As a precaution against contamination while taking cultures of the body fluid, the terminal joint of the leg was first bathed with iodine, then clipped with sterile scissors, and the escaping fluid was touched with the tip of a sterile capillary pipette, into which it entered freely, and was transferred to a culture tube.

Animal inoculations.—Guinea pigs inoculated subcutaneously with body fluid in which organisms were found always died acutely manifesting the typical lesions of tularaemia. Guinea pigs inoculated with the loose, dried particles of tick feces which accumulated quite

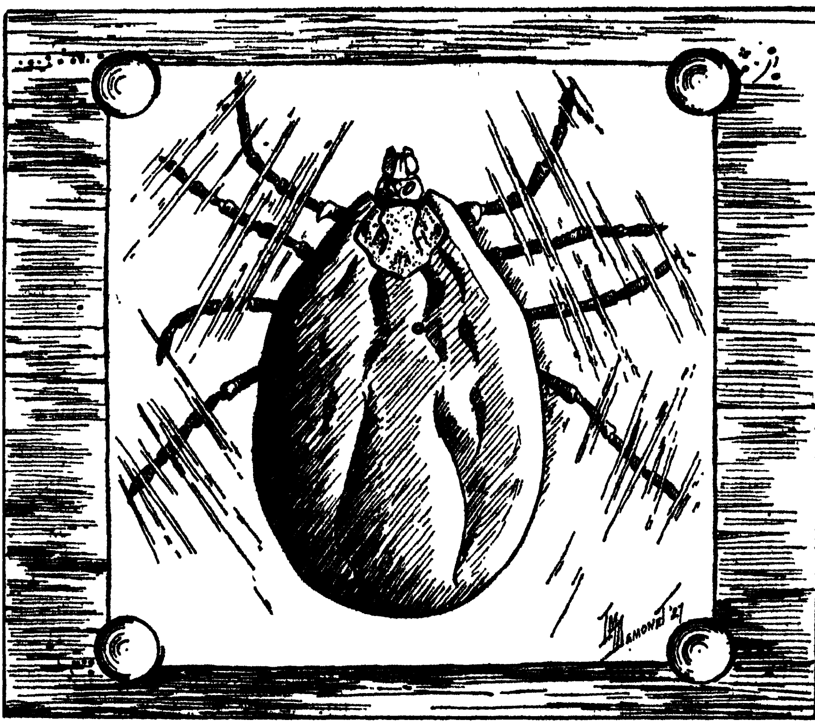

FIG. 8.—Method of immobilizing a tick during dissection. Adhesive plaster fastened to a block of wood with thumb tacks. Legs of tick pressed into adhesive by strokes of a warm needle

abundantly in the wire capsule while ticks were feeding, died acutely and showed the typical lesions of tularaemia.

Pathological technique.—Only living ticks were dissected for serial sections and not those which seemed to die from the infection. During dissection, ticks were immobilized under a dissecting microscope on a strip of zinc oxide adhesive plaster, the outstretched legs being pressed into the adhesive by strokes of a warm dissecting needle (fig. 8). The dorsal chitin was grasped with a pair of strong forceps ground to a fine point, and was cut away with a cataract knife, the entire tick being bathed in a large drop of saline solution.

The organs were then freed in a mass by dissection from the ventral chitin and fixed in Zenker's solution. The further steps of imbedding in paraffin, sectioning, and staining were carried out as recommended by Wolbach.[3]

Parker has used the following modification of the above method of immobilizing a tick: After pressing the extended legs of the tick against the adhesive, he covers the legs with two short strips of adhesive $\frac{1}{16}$-inch wide, one strip on either side, drawn taut in a circular direction, close against the tick's body. This serves to hold the tick quite rigid and prevents any possibility of detachment from the adhesive.

Microscopic changes.—The striking feature of the serial sections was the distention of the epithelial cells of the rectal sac, intestines, and Malpighian tubes with organisms forming blue-stained areas which instantly caught the eye under the 16 mm. objective.

Cellular invasion: The epithelial cells of the rectal sac (figs. 1 and 4) of the lower intestine at its junction with the rectal sac, of the diverticulae of the intestine and of the Malpighian tubes (fig. 7), in the order of frequency named, were swollen and packed with organisms which were confined to the protoplasm of the cells and did not invade the cell nucleus. Between the invaded cells were normal epithelial cells. Occasionally there was a fusiform swelling of the gut wall, projecting toward the lumen and containing organisms; this indicated multiplication of the organisms in the wall itself. Occasionally a circular colony of organisms having the size and shape of a swollen epithelial cell was seen free in the lumen, as if the distended cell had ruptured and discharged its contents in a mass; this would account for the infectiousness of the feces. There was an absence of widespread distribution of free organisms in the lumen, thus indicating an absence of general multiplication of organisms in the contents of the intestine, rectal sac, and Malpighian tubes.

Absence of organisms: Organisms could not with certainty be identified in sections of the salivary glands, ovaries, eggs, male genitalia, heart, brain or muscles. Although the coelomic fluid was rich in organisms, the walls of the body cavity were so torn apart by dissection and washing as to preclude demonstration of organisms within the normal channels of the circulation.

PART II: BEDBUG

There is no report of the transmission of tularaemia to man by bedbugs, nor is there any suspicion that bedbugs transmit the infection in nature among animals. Under experimental conditions in the laboratory, bedbugs have transmitted the infection from mouse to mouse.

[3] Wolbach, S. B.: Studies on Rocky Mountain spotted fever. J. Med. Res., 41: 1-197 (1919).

Duration of infection in bugs.—In the experiments here reported, infection was demonstrated in bugs up to the forty-seventh day, when the experiments terminated. In experiments already reported,[4] tularaemia caused acute death of a mouse which ate a bug which had been infected 226 days previously and caused acute death of a guinea pig which was injected with fresh feces of bugs which had been infected 250 days previously. The indications from the experimental inoculations and from the histopathology are that bugs remain infected throughout their lives. Hereditary transmission of infection through the egg was not tested.

Transmission by bugs.—In previous experiments it was noted [4] that forced interruption of a bug's meal of blood on an infected mouse conduced to the immediate completion of that meal on a healthy mouse. The shorter the period of interruption, the greater the likelihood of transmission. When the interruption was for only a few seconds, transmission was successful in all attempts (five) and was due to the mechanical transfer of infection by a grossly contaminated proboscis.

Transmission by bugs which first fed to engorgement on infected mice and a few days later fed to engorgement on the tails of healthy mice was successful in only 3 of our 23 attempts; the intervals which elapsed between the biting of the infected mice and the biting of the three healthy mice were 7, 15, and 71 days, respectively; the number of bugs employed in the three transmissions were groups of 28, 24, and 14, respectively; the exact parts played by bites and by feces in the three transmissions are impossible of determination, because the mouse tails became freely covered by bug feces during each biting experiment, which lasted one hour.

Method of transmission.—In spite of the long duration of infection in the bug and the wide distribution of infection in its body, transmission by feeding (other than interrupted feeding) was quite infrequent and was probably due to the mechanical entrance of infected feces through the biting wound.

Present studies.—Infection in bedbugs was studied in smears, cultures, and serial sections of 30 bugs experimentally infected by feeding on infected white mice and sectioned at various intervals up to 47 days after the first infective feed.

Source of bugs.—Two lots of uninfected bugs were collected from the wooden cages in which a stock supply of fresh guinea pigs was being bred. One lot was in the larval stage or had apparently molted once. The other lot consisted of adults. Both lots were unengorged.

Method of infecting bugs.—The two lots were first fed on August 24, 1924, on the tail of an infected, stuporous white mouse which had

[4] Francis, Edward, and Lake, G. C.: Transmission of tularaemia by the bedbug, *Cimex lectularius.* Pub. Health Rep., 37: 83-96 (Jan. 20, 1922).

received subcutaneously a virulent culture of *Bacterium tularense* three days before. Within the 47 days the surviving bugs were given 6 feeds, 2 on infected mice and 4 on normal mice, as follows:

August 24: Fed adults and larvae on infected mouse.
September 1: Fed adults and larvae on normal mouse.
September 10: Fed adults and larvae on infected mouse.
September 18: Fed adults and larvae on normal mouse.
September 24: Fed adults and larvae on normal mouse.
October 2: Fed adults and larvae on normal mouse.

Evidence of infection in bugs.—Infection of bugs was tested by the injection of bug feces and coelomic fluid into guinea pigs, by smears and cultures of coelomic fluid, by serial sections of bugs, and by noting the effect on normal mice on which the infected bugs fed. This last test—transmission by feeding—was entirely negative, the four normal mice, noted above, all remaining entirely well. Bug feces were always infective, tests being made every three days by injection of guinea pigs with the washings of soiled strips of filter paper on which the bugs rested and which were replaced every three days with fresh strips.

Coelomic fluid.—The normal coelomic fluid obtained from a leg was clear and straw-colored, but an infected fluid was cloudy or milky in color, showed *Bacterium tularense* in smears, yielded a pure culture of the organism on culture medium and killed a guinea pig acutely, producing the typical lesions of tularaemia. Infection of the coelomic fluid appeared much earlier in bugs infected as adults than in bugs infected as larvae.

INFECTED AS ADULTS: In one instance organisms were noted in smears and cultures of the coelomic fluid of an adult on the fifth day after the first infective feed. The next shortest time was 14 days. Positive smears and cultures of coelomic fluid were obtained thereafter from 13 adults dissected for sections at intervals up to the forty-seventh day, when the last bug was dissected.

INFECTED AS LARVAE: Of 15 bugs infected as larvae and killed for sectioning after various molts at intervals between the thirtieth and forty-seventh day after the first infective feed, none showed organisms in the coelomic fluid of the leg until the forty-seventh day, when the last one was killed; this one showed a moderate number of organisms in a smear of the coelomic fluid obtained by dividing a tibia.

Rickettsia lectularius.—Thread forms of the rickettsia-like parasite described by Arkwright, Atkin, and Bacot [6] were seen in the majority of bugs in smears of the coelomic fluid taken from the legs and in a few instances in sections of cells of the Malpighian tubes. There was no multiplication of these forms on coagulated egg yolk culture medium.

[6] Arkwright, J. A., Atkin, E. E., and Bacot, A.: An hereditary rickettsia-like parasite of the bedbug (*Cimex lectularius*). Parasitology, 13: 27-36 (1921).

Microscopic changes.—Serial sections of infected bugs showed multiplication of organisms in the fresh blood contents of the anterior portion of the mid-gut, heavy infection of the epithelial cells of the posterior portion of the mid-gut, and occasional infection of the Malpighian tubes.

ANTERIOR PORTION OF MID-GUT: Groups or colonies of blue-stained organisms were readily visible, with the 16 mm. objective, distributed throughout the unaltered blood contents of the expanded cardia or anterior portion of the mid-gut, but no invasion of the epithelial cells of the wall were noted in that portion, although organisms were seen in contact with the wall.

POSTERIOR PORTION OF MID-GUT: The most striking feature in bugs was the invasion of the epithelial cells of the posterior portion of the mid-gut with organisms which caused the swollen infected cells to stand out prominently in blue outlines under the 16 mm. objective (fig. 5). With the 2 mm. objective, the cell protoplasm was seen packed with blue-stained organisms which did not invade the cell nucleus (figs 2 and 6). Between infected cells were normal cells. In cross section of a restricted portion of the gut the projection of the swollen cells toward the lumen almost caused its obliteration. In cross section of an expanded portion of the gut, infected cells, with or without a nucleus, were seen free in the lumen as if they had been given off from the wall or as if a cell had ruptured and discharged its contents in a mass having the outline of a cell. The gut wall was invaded with organisms causing fusiform blue-stained swellings to project toward the lumen. Widespread distribution of organisms in the gut contents, such as one would expect if the contents were acting as a culture medium, was not seen. The cells at the constricted junction of gut and rectum were usually heavily infected, but definite infection of the cells of the rectum was not seen.

MALPIGHIAN TUBES: Cells distended with organisms were frequently seen. As in the gut, they were readily visible with the 16 mm. objective.

ABSENCE OF INFECTION: *Bacterium tularense* was not seen in the oesophagus, salivary apparatus, reproductive organs, brain, or muscles.

Technique.—Immobilization of mice while bugs fed upon them was necessary to prevent the mice from eating the bugs. This was accomplished by the use of the apparatus shown in Figure 9.

The infected bugs were kept, some at 26° C. and some at 37° C., on small strips of filter paper contained in glass tubes which stood in water in a glass jar. Only living bugs were dissected. Those which seemed to die from the infection were discarded.

Immobilization of a bug while taking coelomic fluid from its leg was done by pressing its dorsal surface against a fixed piece of adhesive plaster; the proximal joints of a leg were likewise immobilized by pressure against the adhesive plaster, leaving the tibia and tarsus free. If cultures were to be made from the coelomic fluid of a leg, preliminary sterilization of the leg was done by directing the tibia and tarsal segments into a capillary pipette containing iodine. After a few seconds the pipette was removed and, with sterile scissors, the leg was divided through the tibia. With sterile capillary pipette a welling drop of coelomic fluid was collected from the cut stump and

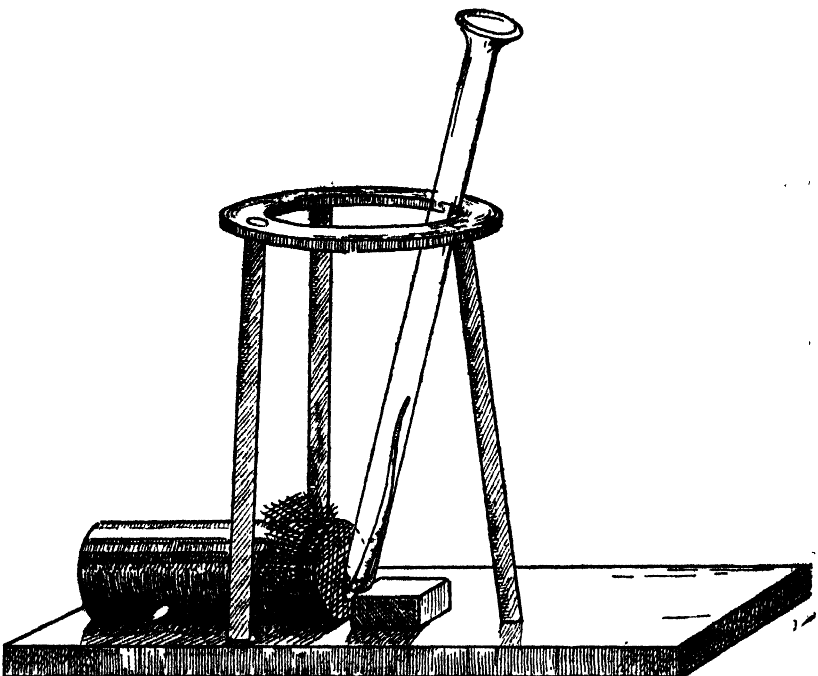

FIG. 9.—Method of immobilizing a mouse while feeding bugs upon his tail. Mouse confined in iron pipe; tail protruding through linen gauze and through hole in upright glass tube. Bugs finally poured in from top of tube.

transferred to coagulated egg yolk medium, and a smear of the fluid was stained and examined. Adults were immobilized for dissection by pressing their ventral surface and legs against adhesive plaster. After removal of the dorsel chitin the internal organs were freed in a mass, fixed in Zenker, and sectioned serially.

Younger forms were sectioned without dissection and without removal of chitin other than the legs, care being taken to fix them in Zenker immediately after a molt, when the chitin was soft; and to insure a flat position during fixation, the first half hour of fixation was with the bug pressed flat against adhesive plaster and covered

with a large drop of Zenker. Serial sections of undissected young specimens showed the internal organs in their natural relations and were much preferable to sections of dissected adults.

Illustrations.—Figures 4, 5, and 6 are by Maj. G. R. Callender, M. C., curator, Army Medical Museum. Figures 1, 2, and 3 are by Miss Etta Piotti, and Figures 7, 8, and 9 are by Miss Inez Demonet.

STATE AND INSULAR HEALTH AUTHORITIES, 1927

DIRECTORY, WITH DATA AS TO APPROPRIATIONS AND PUBLICATIONS

Directories of the State and insular health authorities of the United States for each year from 1912 to 1926 have been published in the Public Health Reports [1] for the information of health officers and others interested in public-health activities. These directories have been compiled from information furnished by the respective State and insular health officers, and include data as to appropriations and publications.

Where an officer has been reported to be a "whole-time" health officer, that fact is indicated by an asterisk (*). For this purpose a "whole-time" health officer is defined as "one who does not engage in the practice of medicine or any other business, but devotes all his time to official duties."

ALABAMA

Board of censors of the State medical association acting as a committee of public health:
- Bibb Graves, governor, ex officio chairman, Montgomery.
- S. W. Welch, M. D., Montgomery.
- W. D. Partlow, M. D., Tuscaloosa.
- J. N. Baker, M. D., Montgomery.
- W. S. Britt, M. D., Eufaula.
- D. T. McCall, M. D., Mobile.
- W. W. Harper, M. D., Selma.
- Wyatt Heflin, M D., Birmingham.
- M. Y. Dabney, M. D., Birmingham.
- B. L. Wyman, M. D., Birmingham.
- R. S. Hill, M. D., Montgomery.

Executive health officer:
- *S. W. Welch, M. D., State health officer, Montgomery.

Registrar of vital statistics:
- *W. T. Fales, Montgomery.
- *Ethel Hawley, chief clerk, Montgomery.

Laboratories of the State board of health:
- General director—
  - *L. C. Havens, M. D., Montgomery.
- Anniston branch—
  - *Katie Mae Wilson, Anniston.

Laboratories of the State board of health—Con.
- Birmingham branch—
  - *E. K. Kline, Dr. P. H., director, Birmingham.
- Mobile branch—
  - *G. E. Davis, M. S., director, Mobile.
- Tennessee Valley branch—
  - *A. J. Perolio, M. D., director, Albany.
- Tuscaloosa branch—
  - *Lucile Watt, M. S., Tuscaloosa.

State sanitary engineer:
- *G. H. Hazelhurst, M. C. E., Montgomery.

Assistant sanitary engineers:
- *H. G. Menke, B. C. E., Montgomery.
- *C. C. Kiker, B. C. E., Montgomery.
- *T. H. Milford, Montgomery.

Epidemiologists:
- *D. G. Gill, M. D., director, Montgomery.
- *A. H. Graham, M. D., Malariologist, Montgomery.

County organization:
- *D. L. Cannon, M. D., C. P. H., first director, Montgomery.
- *C. L. Murphree, M. D., second director, Decatur.
- *B. F. Austin, M. D., third director, Montgomery.

[1] Reprints Nos. 83, 123, 190, 268, 344, 405, 488, 544, 605, 706, 775, 871, 949, 1,043, and 1,106, from the Public Health Reports.

Public health nursing:
*Jessie L. Marriner, R. N., director, Montgomery.
*Francis Montgomery, R. N., assistant director, Montgomery.
Venereal disease control:
*W. C. Blasingame, director, Montgomery.
Inspection:
*C. A. Abele, director, Montgomery.
*H. J. Thrasher, deputy inspector, Montgomery.
*H. W. Caldwell, deputy inspector, Montgomery.
*C. H. South, deputy inspector, oyster control, Mobile.
*L. C. Frank (Associate sanitary engineer, U. S. P. H. S.) in charge of milk inspection, Montgomery.
*J. W. Garrett, milk inspector, Montgomery.
*F. A. Clarke, D. V. M., milk inspector, Montgomery.
*U. D. Franklin, milk inspector, Montgomery.
*F. H. Downs, milk inspector, Montgomery.
Tuberculosis control:
*J. M. Graham, director, Montgomery.
Chief clerk:
*Bessie A. Tucker, Montgomery.
Financial secretary:
*Adna Eley Alldredge, Montgomery.
Appropriations for fiscal year ending September 30, 1927:

Central administration	$150,080.00
County health work	57,083.33

ALASKA

Board of health:
George A. Parks, governor, Juneau.
Harry C. De Vighne, M. D., commissioner of health, Juneau.
Executive health officer:
Harry C. De Vighne, M. D., commissioner of health, Juneau.
Assistant commissioners of health:
Curtis Welch, M. D., Nome.
J. A. Sutherland, M. D., Fairbanks.
A. H. Blakemore, Cordova.
Appropriation for 1927–1928, $18,100.

ARIZONA

State board of health:
George W. P. Hunt, governor, president, Phoenix.
John W. Murphy, attorney general, vice president, Phoenix.
F. T. Fahlen, M. D., secretary, Phoenix.
Executive health officer:
F. T. Fahlen, M. D., State superintendent of public health, Phoenix.
Executive secretary:
*Mrs. F. C. Hurst, jr., Phoenix
State registrar of vital statistics:
F. T. Fahlen, M. D., Phoenix.
Child hygiene division:
*Mrs. Charles R. Howe, director, Phoenix.
*Jennette W. Hemphill, R. N., field nurse.
*J. Frances Ross, R. N., field nurse.
*Mary S. Kelleher, R. N., field nurse.
State bureau of vital statistics:
*Mrs. Ruby L. Jacquemin, statistician, Phoenix.
Director State laboratory:
*Miss Jane H. Rider, Tucson.
Appropriations for fiscal year ending June 30, 1928:

State board of health—	
Salaries	$12,800.00
Operating expense	5,450.00
Traveling expense	2,500.00
Capital investment	500.00
Repairs and replacements	150.00
State laboratory, Tucson—	
Salaries	6,540.00
Operating expense	700.00
Traveling expense	900 00
Capital investment	500.00
Child hygiene division, Sheppard-Towner work—	
Salaries	13,475.00
Operating expense	1,022.42
Traveling expense	5,010.00
Unexpended balance of 1927 funds	77.01
Total	49,624.43

The Arizona State laboratory is connected with the University of Arizona, and is located at Tucson, Ariz.

ARKANSAS

Board of health:
John R. Dibrell, M. D., president, Little Rock.
O. L. Williamson, M. D., Marianna.
E. L. Watson, M. D., Newport.
A. S. Gregg, M. D., Fayetteville.
L. D. Duncan, M. D., Waldron.
W. P. Parks, M. D., Hot Springs.
F. O. Mahony, M. D., El Dorado.
Executive health officer:
***C. W. Garrison, M. D.**, State health officer, Little Rock.
Bureau of vital statistics:
*Mrs. Mary Ellis Brown, statistician, Little Rock.
Hygienic laboratory:
*H. V. Stewart, associate director, Little Rock.
Bureau of sanitation and malaria control:
*M. Z. Bair, chief sanitary engineer, Little Rock.
Bureau of venereal disease control:
*C. W. Garrison, M. D., director, Little Rock.
Bureau of child hygiene:
*C. W. Garrison, M. D., director, Little Rock.
Appropriations for biennial period ending June 30, 1929:

Executive department, salaries and miscellaneous	$26,080
Bureau of vital statistics	33,800
Payment of local registrars	34,000
Bureau of venereal disease control	2,000
Malaria control	8,400
Bureau of sanitation	10,020
Bureau of child hygiene	3,000
Hygienic laboratory	18,340
Total	135,640

CALIFORNIA

Board of public health:
- George E. Ebright, M. D., president, San Francisco.
- Fred F. Gundrum, M. D., vice president, Sacramento.
- Walter M. Dickie, M. D., director of public health, Sacramento.
- A. J. Scott, jr., M. D., Los Angeles.
- Edward F. Glaser, M. D., San Francisco.
- Adelaide Brown, M. D., San Francisco.
- Robert A. Peers, M. D., Colfax.

Department of public health:
- *Walter M. Dickie, M. D., director of public health, Sacramento.
- *Daniel H. Blood, assistant to director, Sacramento.

Epidemiologist:
- *Charles H. Halliday, M. D., Berkeley.
- *Paul M. Ellwood, M. D., assistant epidemiologist, Berkeley.

District health officer:
- *Gavin Telfer, M. D., southern division.

Chief sanitary inspector:
- *Edward T. Ross, Sacramento.

Chief cannery inspector:
- *Milton P. Duffy, San Francisco.

Vital statistics:
- *L. E. Ross, registrar, Sacramento.

Bureau of registration nurses:
- *Anna C. Jamme, R. N., chief, San Francisco.

Bureau of tuberculosis:
- *Edythe L. M. Tate-Thompson, chief, Sacramento.

Bureau of food and drugs:
- *M. E Jaffa, chief, Berkeley.

Bacteriological laboratory:
- *W. H. Kellogg, M. D., chief, Berkeley.

Bureau of sanitary engineering:
- *C. G. Gillespie, C. E., chief, Berkeley.

Bureau of child hygiene:
- *Ellen S. Stadtmuller, M. D., chief, San Francisco.

Malaria control:
- Edward Stuart, C. E., in charge.

Appropriations for biennial period ending June 30, 1929. (For 79th and 80th fiscal years.)

Administration:	
For support	$498,253
Aid to mosquito abatement districts	20,000
Division of cannery inspection:	
For support	126,020
(Payable from cannery inspection funds.)	
Nurses registration bureau:	
For support	35,390
Tuberculosis bureau:	
For support	43,640
For subsidies	600,000
Total	1,323,303

Other sources of revenue:
- Fees for registration of nurses, $10 each.
- Renewal of registration certificates, $1 per year.
- Licensing of cold-storage warehouses, rated according to capacity.
- Fines for violation of pure food and drugs act.
- Fees for licenses, $10 each, and contributions, for credit to division of cannery inspection.
- Fees for certified copies of records.

Publications issued by health department:
- Biennial report.
- Weekly bulletin.

Laboratories at Berkeley are connected with University of California.

COLORADO

Board of health:
- Sherman Williams, M. D., president, Denver.
- S. R. McKelvey, M. D., secretary, Denver.
- J. S. Hasty, M. D., Lamar.
- Ben Beshoar, M. D., Trinidad.
- M. Ethel V. Fraser, M. D., Denver.
- Ralph M. Jones, D. O., Denver.
- C. A. Davlin, M. D., Alamosa.
- Charles W. Thompson, M. D., Pueblo.

Executive health officer:
- *S. R. McKelvey, M. D., secretary, State board of health, Denver.

Bacteriologist:
- William C. Mitchell, M. D., Denver.

Medical inspector:
- J. W. Morgan, M. D , Denver.

State food and drug commissioner:
- *S. H. Loeb, Denver.

Division of social hygiene:
- *S. R. McKelvey, M. D., director, Denver.

Division of sanitary engineering:
- *Dana E. Kepner, director, Denver.

Division of plumbing inspection:
- *Irving H. Fuller, inspector, Denver.

Appropriations for years 1927–1928:

Salaries	$38,400
Laboratory equipment and supplies	4,000
Printing and publications	7,100
Traveling expenses	8,000
Samples and supplies (food)	600
Sanitary engineering	13,900
Venereal disease	40,000
Incidental expenses	2,040
Total	114,040

The laboratory of State board of health is not connected with any institution.

CONNECTICUT

Public health council:
- Edward K. Root, M. D.
- S. B. Overlock, M. D.
- C.-E. A. Winslow, M. S., D. P. H.
- James W. Knox.
- Edward P. Jones.
- James A. Newlands, B. S.

Executive health officer:
- *Stanley H. Osborn, M. D., C. P. H., commissioner of health, Hartford.

Bureau of preventable diseases:
*Millard Knowlton, M. D., C. P. H., director.
Bureau of vital statistics:
*William C. Welling, director.
Bureau of public health nursing:
*Sarah R. Addison, R. N., director.
Bureau of child hygiene:
*A. Elizabeth Ingraham, M. D.
Bureau of public health instruction:
*Elizabeth C. Nickerson, B. S., C. P. H.
Bureau of laboratories:
*F. Lee Mickle, M. S., director.
Bureau of sanitary engineering:
*Warren J. Scott, S. B., director.
Division of occupational diseases:
*Albert S. Gray, M. D.
Division of venereal diseases:
*--
Division of mental hygiene:
H. A. Bancroft, M. D., chief.
Division of mouth hygiene:
Clyde R. Salmons, D. D. S., chief.
Appropriation for fiscal period ending June 30, 1929 (two years), $519,500.
Publications issued by health department:
Weekly bulletin.
Monthly bulletin.
Annual vital statistics report.
Annual report of State department of health.
Miscellaneous pamphlets.

Laboratory is not connected with an educational institution.

DELAWARE

State board of health:
William P. Orr, M. D., president, Lewes.
Mrs. Charles Warner, vice president, Wilmington.
Robert E. Ellegood, M. D., State Road.
Margaret L. Handy, M. D., Wilmington.
Mrs. Julia Ashbrook, Wilmington.
W. P. Pierce, M. D., Milford.
Executive health officer:
*Arthur T. Davis, M. D., Dover.
Director of laboratory:
*Rowland D. Herdman, B. S., Dover.
Communicable diseases:
*L. D. Phillips, M. D., Dover.
Director of child hygiene:
*Clealand A. Sargent, M. D., Dover.
Sanitary engineer:
*Richard C. Beckett, B. S., Dover.
Superintendent of Brandywine sanatorium:
*Seth Hurdle, M. D., Marshallton.
Superintendent of Edgewood sanatorium:
*Elizabeth Van Vranken, R. N., Marshallton
Appropriations for each fiscal year ending June 30, 1928 and 1929:

General administration	$60,500
Hygienic laboratory	9,000
Edgewood sanatorium for colored tuberculous patients	12,000
Brandywine sanatorium for white tuberculous patients	40,000
Total	121,500

Publications:
Biennial report.
Bi-monthly health news.
Bulletin on health subjects.

The laboratory of the State board of health is not connected with the State university.

DISTRICT OF COLUMBIA

Executive health officer:
*William C. Fowler, M. D., health officer, Washington.
Assistant health officer:
*Edward J. Schwartz, M. D., Washington.
Chief clerk and deputy health officer:
*Arthur G. Cole, Washington.
Chief bureau of preventable diseases and director bacteriological laboratory:
*James G. Cumming, M. D., Washington.
Bacteriologist:
*John E. Noble, Washington.
Serologist:
*Jesse P. Porch, D. V. M., Washington.
Chemist:
*Aubrey V. Fuller, Washington.
Chief sanitary inspector:
*C. R. Holman, Washington.
Director child hygiene service:
*Hugh J. Davis, M. D., Washington.
Chief food inspector:
*Reid R. Ashworth, D. V. S., Washington.
Chief medical and sanitary inspector of schools:
*Joseph A. Murphy, M. D., Washington.
Appropriations for the fiscal year ending June 30, 1928:

Salaries	$156,740
Prevention of communicable diseases	40,000
Disinfecting service	6,000
Isolation wards at hospitals	23,000
Milk and food inspection and regulation	6,100
Dispensary service, including treatment of tuberculosis and venereal diseases	20,000
Maintaining a child hygienic service	45,000
Hygiene and sanitation, public schools	66,800
Laboratory service	3,000
Miscellaneous	7,950
Total	374,590

Publications issued by health department:
Weekly report by health department.
Annual report of health officer.
Monthly statement of average grade of milk sold.

FLORIDA

Board of health:
Chas. H. Mann, president, Jacksonville.
H. Mason Smith, M. D., Tampa.
W. D. Nobles, M. D., Pensacola.
Executive health officer:
*B. L. Arms, M. D., State health officer, Jacksonville.
Diagnostic laboratories:
*Pearl Griffith, B. E., acting director, Jacksonville.

Bureau of vital statistics:
- *Stewart G. Thompson, D. P. H., director, Jacksonville.

Bureau of communicable diseases:
- *F. A. Brink, M. D., director, Jacksonville.

Bureau of sanitary engineering:
- *E. L. Filby, C. E., director, Jacksonville.

Bureau of child hygiene and public health nursing:
- *Mrs. Laurie Jean Reid, R. N., director, Jacksonville.

Appropriation for health department:
- Three-eighths mill tax levied upon the assessable property of the State.

Publications issued by health department:
- Pamphlets covering all phases of public health.
- Public health information disseminated through the weekly and daily papers of the State.
- Florida health notes.
- Annual reports.

Laboratory not connected with State university or other similar educational institution.

GEORGIA

Board of health:
- Robert F. Maddox, president, Atlanta.
- James H. McDuffie, M. D., vice president, Columbus.
- T. F. Abercrombie, M. D., secretary, Atlanta.
- Charles H. Richardson, M. D., Macon.
- A. D. Little, M. D., Thomasville.
- John W. Daniel, M. D., Savannah.
- W. I. Hailey, M. D., Hartwell.
- Fred D. Patterson, M. D., Cuthbert.
- John A. Rhodes, M. D., Crawfordville.
- A. C. Shamblin, M. D., Rome.
- C. R. Brice, D. D. S., Gainesville.
- A. A. Lawry, D. D. S., Valdosta.
- M. S. Brown, M. D., Fort Valley.
- M. L. Duggan, State superintendent of schools, ex officio, Atlanta.
- J. M. Sutton, State veterinarian, ex officio, Atlanta.

Executive health officer:
- *T. F. Abercrombie, M. D., commissioner, Atlanta.
- *Joe P. Bowdoin, M. D., deputy commissioner, Atlanta.

Division of venereal-disease control:
- *Joe P. Bowdoin, M. D., director, Atlanta.

Division of county health work:
- *M. E. Winchester, M. D., director, Atlanta.

Division of laboratories:
- *T. F. Sellers, director, Atlanta.

Division of sanitary engineering:
- *L. M. Clarkson, director, Atlanta.

State tuberculosis sanatorium:
- *Edson W. Glidden 2d, M. D., superintendent, Alto.

Bureau of vital statistics:
- *Butler Toombs, acting director, Atlanta.

Division of child hygiene:
- *Joe P. Bowdoin, M. D., director, Atlanta.

Georgia training school for mental defectives:
- *John W. Oden, M. D., superintendent.

Division of accounting and purchasing:
- *C. L. Tinsley, director, Atlanta.

Appropriations for the fiscal year ending Dec. 31, 1927:

General appropriation	$31,431
Venereal-disease control	10,000
Maternity and infant hygiene	5,000
State tuberculosis sanatorium	100,000
Georgia training school for mental defectives	85,000
Total appropriation by legislature	231,431
Maternity and infancy	13,610
Maternity and infancy (Federal Government funds, fiscal year ending June 30, 1927)	23,610
Central administration, county health work (International Health Board funds)	4,000
Central administration, malaria control (International Health Board funds)	3,200
Grand total	275,851

HAWAII

Board of health:
- F. E. Trotter, M. D., president and executive officer, Honolulu.
- W. B. Lymer, attorney general, Honolulu.
- C. B. Cooper, M. D., Honolulu.
- D. S. Bowman, Honolulu.
- J. D. McVeigh, Honolulu.
- J. Ordenstein, Honolulu.
- George Denison, Honolulu.

Executive health officer:
- *F. E. Trotter, M. D., president of the board of health, Honolulu.

Secretary:
- *M. R. Weir, Honolulu.

Bacteriologist:
- A. N. Sinclair, M. D., Honolulu.

Tuberculosis bureau:
- *Howard W. Chamberlin, M. D., Honolulu.

Health officer:
- James T. Wayson, M. D., Honolulu.

Sanitary engineer:
- *S. W. Tay, Honolulu.

Food commissioner and analyst:
- *M. B. Bairos, Honolulu.

Oahu Insane Asylum:
- *A. B. Eckerdt, M. D., superintendent, Honolulu.

Leper settlement:
- *R. L. Cooke, superintendent, Kalaupapa, Molokai.
- *A. B. Potter, M. D., physician, Kalaupapa, Molokai.
- *Robert L. McArthur, M. D., assistant physician, Kalaupapa.

Chief sanitary inspector, Oahu:
- *A. K. Arnold, Honolulu.

Chief sanitary inspector, Hawaii:
- *C. Charlock, Hilo.

Chief sanitary inspector, Maui:
- *R. C. Lane, Wailuku.

Chief sanitary inspector, Kauai:
- *A. P. Christian, Kapaa.

Appropriations, 1927-1929:

Board of health—		
Salary, president		$14,400.00
Salary, public health officer		8,400.00
Salary, secretary		7,200.00
Salaries, office employees		32,860.00
Expenses, office		16,005.00
Expenses, board of medical examiners—		
Personal service		250.00
Expenses		700.00
Bureau of vital statistics—		
Salary, registrar general		6,000.00
Salaries, deputies and clerks		22,200.00
Salaries, registrar, Honolulu		3,600.00
Expenses, office registrar general		12,000.00
Purchase of equipment		400.00
Bureau of sanitary engineering—		
Salary, sanitary engineer		9,600.00
Other personal service		8,640.00
Expenses		1,740.00
Sanitation—		
Salary, chief sanitary inspector, Oahu		7,200.00
Other personal services		157,800.00
Sanitary expenses, Territory		20,125.00
Salaries and expenses, plague campaign		51,540.00
Salaries and expenses, mosquito campaign		6,500.00
Pure food and drug bureau—		
Salaries		21,600.00
Expenses		3,525.00
Bacteriological bureau—		
Salary, bacteriologist and pathologist		6,000.00
Other personal services		500.00
Expenses		3,950.00
Government physicians—		
Salaries		76,560.00
Hawaii	$32,160.00	
Maui	18,600.00	
Kauai	12,000.00	
Oahu	12,000.00	
Lauai	1,800.00	
(Provided, however, that no salary shall be allowed or paid unless physicians employed or appointed in the several districts shall treat the indigent sick free of charge in such district or districts, as the case may be.)		
Quarantine and medical service—		
Salaries		23,600.00
Expenses		33,050.00
Quarantine stations—		
Repairs, maintenance, equipment, and salaries, Honolulu; Repairs, maintenance, equipment, and salaries, Hilo		20,805.00

Appropriations, 1927-1929—Continued.

Care of lepers and their children—		
KALAUPAPA AND KALIHI HOSPITAL		
Personal services—		
Superintendent		$9,600.00
Other personal services		235,890.00
Other current expenses		431,244.00
Motor vehicles		3,150.00
Other equipment		13,266.00
Buildings and equipment		4,000.00
Allowance needy blind patients, extra $5 per month		7,200.00
KALIHI HOSPITAL AND LEPER SETTLEMENT		
Aiding indigent persons released from Kalihi Hospital and Leper Settlement		2,500.00
KAPIOLANI GIRLS' HOME		
Salaries		15,330.00
Maintenance		36,450.00
KALIHI BOYS' HOME		
Salaries		24,940.00
Maintenance		34,150.00
Prevention and cure of tuberculosis—		
Salaries		116,195.00
Expenses, including purchase of automobiles		38,355.00
Cure and treatment o ftubercular patients in sanitariums		421,680.00
Oahu, Leahi Home	$168,000.00	
Maui, Kula Sanitarium	96,000.00	
Kauai, Samuel Mahelona Memorial Hospital	72,000.00	
Hawaii, Puumaile Home	40,250.00	
Improvements, Puumaile Home	45,430.00	
Insane asylum—		
Salary, superintendent		8,400.00
Pay roll		229,810.00
Maintenance		169,790.75
Compensation to patients for labor		600.00
Other equipment		48,813.25
Sanitarium—		
Salaries, employees		21,120.00
Maintenance		16,594.00
Venereal-disease clinic—		
Salaries		11,400.00
Expenses		5,285.00
Bureau welfare and hygiene of maternity and infancy—		
Salaries		8,400.00
Expenses		4,951.92
Equipment		100.00
Total		2,495,904.92

Publications issued by health department:

Annual report of president.

Registrar general's report.

Laboratory work done in the private office of Dr. A. N. Sinclair; in Hilo, Hawaii, Laboratory in Board of Health Building.

IDAHO

Department of public welfare:
*David Burrell, commissioner.
*———— ————, public health adviser.
*Lawrence J. Peterson, bacteriologist.
*William Vernon Leonard, chemist.
*Robert H. Pratt, dairy, food, drug, hotel, and sanitary inspector.
*C. K. Macey, dairy, food, drug, hotel, and sanitary inspector.
Executive health officer:
*David Burrell, commissioner of public welfare, Boise.
Appropriation for biennial period ending Dec. 31, 1928:

Personal service	$51,120
Other expenses	15,025
Venereal-disease control	2,200
Total	68,345

State laboratory is not connected with an educational institution.

ILLINOIS

Board of public-health advisors:
T. D. Doan, M. D., president.
Herman N. Bundesen, M. D., secretary.
W. A. Evans, M. D.
E. P. Sloan, M. D.
Mrs. E. N. Monroe.
Director of public health:
*Isaac D. Rawlings, M. D., Springfield.
Assistant director of public health:
*Thomas H. Leonard, M. D.
Division of sanitation and engineering:
*Harry F. Ferguson, C. E., chief sanitary engineer.
Division of communicable diseases:
*J. J. McShane, M. D., D. P. H., chief.
Division of child hygiene and public-health nursing:
*Grace S. Wightman, M. D., superintendent.
Division of tuberculosis:
*Thomas H. Leonard, M. D., acting chief.
Division of laboratories:
*Thomas G. Hull, Ph. D., chief.
Division of vital statistics:
*Sheldon L. Howard, registrar.
Division of public-health instruction:
*Baxter K. Richardson, chief.
Division of social hygiene:
*C. C. Copelan, M. D., chief.
Division of hotel and lodging-house inspection:
*Arch Lewis, superintendent.
Appropriations for biennial period ending June 30, 1929:

Salaries	$774,460
Salaries State officers	30,400
Office expenses	20,300
Traveling expenses	134,192
Operating, supplies, and expenses	188,932
Equipment and repairs	27,100
Contingent	38,700
Printing	51,200
Postage	20,000
Rabies	4,000
Total	1,289,284

Publications issued by health department:
Illinois Health News (monthly).
Weekly press bulletin.
Educational health circulars.
Laboratory is not connected with an educational institution.

INDIANA

Board of health:
James A. Turner, M. D., president, Ladoga.
A. J. Hostetler, M. D., vice president, Lagrange.
John H. Green, M. D., North Vernon.
Cavins R. Marshall, M. D., Indianapolis.
William F. King, M. D., secretary, Indianapolis.
Executive health officer:
*William F. King, M. D., State health commissioner, Indianapolis.
Division of vital statistics:
*H. M. Wright, director, Indianapolis.
Laboratory of hygiene:
*C. F. Adams, M. D., B. S. A., director, Indianapolis.
Division of food and drugs:
*I. L. Miller, State food and drug commissioner, Indianapolis.
Milk laboratory:
*Frank C. Wilson, B. S., M. S., director, Indianapolis.
Water and sewage laboratory:
*Lewis S. Finch, B. S., sanitary engineer, Indianapolis.
Division of child hygiene:
*Ada E. Schweitzer, M. D., director, Indianapolis.
Division of communicable diseases:
*H. W. McKane, M. D., director, Indianapolis.
Epidemiologist:
*Walter W. Lee, M. B., Indianapolis.
Division of school hygiene:
*H. R. Condrey, director, Indianapolis.
Division of housing:
*A. E. Wert, director, Indianapolis.
Department of public-health nursing:
*Eva F. McDougall, R. N., director, Indianapolis.
*Ella McNeil, R. N., B. S., assistant director, Indianapolis.
Appropriations for biennial period ending September 30, 1929, $180,500 per annum.
Laboratories are not connected with an educational institution.

IOWA

State department of health:

EX OFFICIO

John Hammill, governor, Des Moines.
W. C. Ramsay, secretary of State, Des Moines.
R. E. Johnson, treasurer of State, Des Moines.
J. W. Long, auditor of State, Des Moines.
M. G. Thornburg, secretary of agriculture, Des Moines.
Henry Albert, M. D., Des Moines.

APPOINTIVE BY GOVERNOR

W. D. Hayes, C. P. H., president, Sioux City.
H. E. Sugg, M. D., Clinton.
H. L. Sayler, M. D., Des Moines.
D. C. Steelsmith, M. D., C. P. H., Dubuque.
A. A. Robertson, M. D., Council Bluffs.

Executive health officer:
*Henry Albert, M. D., State health commissioner, Des Moines.
*James Wallace, M. D., C. P. H., deputy commissioner, Des Moines.
Director of public health nursing:
*Edith Countryman, R. N., Des Moines.
Director, division of examinations:
*H. W. Grefe, Des Moines.
Chief engineer:
*A. H. Wieters, C. E., Des Moines.
Director nursing education:

Lecturer to girls:
*D. Pirie Beyea, Des Moines.
Assistant State registrar:
*R. L. McLaren.
Housing work is carried on by engineering division.
Medical, nurses, dental optometry, cosmetology, chiropractic, osteopathy, embalming, podiatry, and barber examining boards are combined in State department of health.
Appropriations for fiscal year ending June 30, 1928:

For salaries and wages	$29,700
Miscellaneous traveling	3,000
Antitoxin, vaccine and other prophylactics	5,000
Sanitary engineering and housing—	
Salaries and wages	9,900
Traveling	5,000
Equipment and laboratory	1,000
Quarantine enforcement and other contingencies	4,000
Total	57,600

Publications:
Biennial report, quarterly bulletin, health news letter.
Laboratories (at Iowa City):
Staff for bacteriological and sereological laboratories and appropriation for the same not included in above.

KANSAS

Board of health:
Clarence A. McGuire, M. D., president, Topeka.
Walter A. Carr, M. D., Junction City.
George I. Thacher, M. D., Waterville.
John H. Henson, M. D., Mound Valley.
Addison Kendall, M. D., Great Bend.
Clay E. Coburn, M. D., Kansas City.
Arthur J. Anderson, M. D., Lawrence.
V. C. Eddy, M. D., Colby.
Walter J. Eilerts, M. D., Wichita.
Thomas Armory Lee, attorney, Topeka.
Executive health officer:
*Earle G. Brown, M. D., secretary State board of health, Topeka.
Division of vital statistics:
*W. J. Davies, State registrar.
Division of communicable diseases:
*C. H. Kinnaman, M. D., epidemiologist, Topeka.
Division of foods and drugs:
*Thomas I. Dalton, assistant chief food and drug inspector, Topeka.
Division of child hygiene:
*J. C. Montgomery, M. D., chief, Topeka.
Division of rural sanitation:
*J. C. Montgomery, M. D., director, Topeka
Division of water and sewage:
Earnest Boyce, B. S., chief, Lawrence.
Division of public health education:
*Earle G. Brown, M. D., director, Topeka.
Division of venereal diseases:
*Earle G. Brown, M. D., director, Topeka.
Water and sewage laboratories at Kansas University:
Earnest Boyce, B. S., director, Lawrence.
Food laboratory at Kansas University:
Prof. E. H. S. Bailey, director of food analysis, Lawrence.
Drug laboratory at Kansas University:
Prof. L. D. Havenhill, director of drug analysis, Lawrence.
Food laboratory at Kansas Agricultural College:
Prof. H. H. King, director of food analysis, Manhattan.
Public health laboratory, Topeka:
*Earle G. Brown, M. D., acting director, Topeka.
Appropriations for fiscal year ending June 30, 1928:

Salaries	$21,300
Miscellaneous	3,550
Water and sewage division	3,000
Free distribution of antitoxins, etc	3,500
Public health laboratory, and the department of division of venereal disease control; distribution of arsphenamine (606) to indigent poor of the State; assistance and maintenance of clinics	10,000
Division of child hygiene	5,000
Division of food and drugs	5,000
County aid, full time demonstrations	5,000
Total	56,350

Other sources of revenue:
Marriage fees, approximately $20,000.
Water and ice analysis fees, approximately $14,000.
Food and drug laboratories at Kansas University maintained by university maintenance fund, and food laboratory at Kansas Agricultural College maintained by agricultural college maintenance fund.
Publications issued by health department:
Quarterly bulletin.
Biennial report.
Weekly morbidity report.

KENTUCKY

Board of health:
Joseph E. Wells, M. D., president, Cynthiana.
A. T. McCormack, M. D., secretary, Louisville.
J. Watts Stovall, Grayson.
Vernon Blythe, M. D., Paducah.
H. T. Alexander, M. D., Fulton.
H. H. Carter, D. O. Shelbyville.
George S. Coon, M. D., Louisville.
J. W. Kincaid, M. D., Catlettsburg.
Addison Dimmitt, Louisville.

Executive health officer:

*A. T. McCormack, M. D., D. P. H., State health officer, Louisville..

Bureau of vital statistics:

*J. F. Blackerby, director, Louisville.

Bureau of bacteriology:

*Lillian H. South, M. D., director, Louisville.

Bureau of sanitary engineering:

*F. C. Dugan, C. E., director, Louisville.

Bureau of food, drugs, and hotels:

*Sarah Vance Dugan, director, Louisville.

Bureau of venereal diseases:

Jethra Hancock, M. D., Louisville.

Bureau of public health nursing:

*Margaret East, R. N., director, Louisville.

Bureau of maternity and child health:

*Annie S. Veech, M. D., director, Louisville.

*Juanita Jennings, M. D., assistant, Louisville.

Bureau of prevention of trachoma and blindness:

*C. B. Kobert, M. D., director, Louisville.

Bureau of public health education:

*Adelbert Thomas, director.

Bureau of county health work:

*P. E. Blackerby, M. D., director and assistant State health officer, Louisville.

*M. W. Steele, M. D., assistant, Louisville.

*V. A. Stilley, M. D., assistant, Louisville.

Bureau of mental hygiene:

Frank O'Brien, Ph. D., director, Louisville.

Bureau of tuberculosis and State tuberculosis sanitarium:

*Paul A. Turner, M. D., director and superintendent, Louisville.

Bureau of dental health:

R. P. Keene, D. D. S., director.

Legislative appropriation for fiscal year ending June 30, 1928, $238,698.84.

Publications issued by health department:

Monthly bulletin.

Laboratories:

State board of health, Louisville.

Public service laboratories of the University of Kentucky, at Lexington, are required by law to handle health work, but are not included in above appropriation.

LOUISIANA

Board of health:

Oscar Dowling, M. D., president, Shreveport.

T. T. Tarlton, M. D., vice president, Grand Coteau.

Fred Ratzburg, D. D. S., Shreveport.

E. S. Matthews, M. D., Bunkie.

Mrs. L. C. McVoy, Baton Rouge.

M. P. Boebinger, M. D., New Orleans.

A. O. Hoefeld, M. D., New Orleans.

T. J. Labbe, St. Martinville.

G. M. Snellings, M. D., Monroe.

Miss Fannie B. Nelken, secretary.

Executive health officer:

*Oscar Dowling, M. D., president, State board of health, New Orleans.

Bacteriologist:

W. H. Seemann, M. D., New Orleans.

Registrar:

J. E. Doussan, M. D., New Orleans.

Sanitary engineer:

*John H. O'Neill, New Orleans.

*A. H. Fletcher, assistant sanitary engineer.

Child hygiene:

*Agnes Morris, director, New Orleans.

Maud Loeber, M. D., medical consultant, New Orleans.

Food and drug commissioner:

*L. C. Williams, assistant, New Orleans.

Analyst:

*Cassius L. Clay, New Orleans.

Epidemiologist:

*Paul R. Neal, M. D., New Orleans.

Director of dairy division:

*Russell S. Smith.

Bureau of research and information:

*Leonard C. Scott, acting assistant surgeon, U. S. P. H. S., New Orleans.

Bureau of public health administration:

*C. V. Akin, surgeon, U. S. P. H. S., New Orleans.

Appropriations for fiscal year ending June 30, 1928, $75,000.

Liquidation board, sanitary rehabilitation flooded areas, $62,000.

Other sources of revenue:

Fees from inspection of oil, and tax on kerosene.

Publications issued by health department:

Monthly bulletin.

Quarterly bulletin.

Annual almanac.

Biennial report.

Miscellaneous leaflets.

MAINE

Public health council:

C. F. Kendall, M. D., chairman, Augusta.

Hiram Ricker, South Poland.

H. A. Kelley, D. D. S., Portland.

Miss Annie Peabody, Portland.

J. G. Towne, M. D., Waterville.

O. R. Emerson, M. D., Newport.

Executive health officer:

*C. F. Kendall, M. D., State commissioner of health, Augusta.

Division of administration:

*C. F. Kendall, M. D., Augusta.

Division of communicable diseases:

*G. H. Coombs, M. D., director, Augusta.

Division of laboratories:

*———— ————.

Division of sanitary engineering:

*Elmer W. Campbell, D. P. H., Augusta.

Division of vital statistics:

*C. F. Kendall, M. D., State registrar, Augusta.

Division of social hygiene:

*George H. Coombs, M. D., director, Augusta.

Division of public health nursing and child hygiene:

*Edith L. Soule, R. N., Augusta.

Division of dental hygiene:

*Dorothy Bryant, D. H., Augusta.

District health officers:

*J. L. Pepper, M. D., South Portland.

*E. P. Goodrich, M. D., Lewiston.

*H. D. Worth, M. D., Bangor.

*G. H. Hutchins, M. D., Waterville.

*L. W. Hadley, M. D., Machias.

*G. E. Parsons, M. D., Rockland.

*B. F. Porter, M. D., Caribou.

Appropriations for fiscal year ending June 30, 1928:

Salaries and clerk hire	$38,000
Office expense and epidemic fund	20,000
District and local health officers	38,000
Venereal-disease control work	14,000
Maternity and child-welfare work	10,000
Branch State laboratory, Caribou	2,500
Aid for typhoid carriers	3,000
Total	125,500

Other sources of revenue:
Census Bureau, Washington, D. C., about $800.
Federal funds under Sheppard-Towner Act, $15,000.
License fees from camps, roadside eating and lodging places, about $4,000.

Publications issued by the department of health:
Annual report on vital statistics.

MARYLAND

Board of health:
John S. Fulton, M. D., chairman, Baltimore.
William H. Welch, M. D., Baltimore.
Thomas H. Robinson, attorney general, Baltimore.
William W. Ford, M. D., Baltimore.
C. Hampson Jones, M. D., Baltimore.
Tolley A. Biays, Baltimore.
Benjamin C. Perry, M. D., Bethesda
E. F. Kelly, Phar. D., Baltimore.

Executive health officer:
*John S. Fulton, M. D., director of health, Baltimore.

Division of legal administration:
*J. Davis Donovan, chief, Baltimore.

Division of public health education
*Gertrude B Knipp, chief, Baltimore.

Bureau of communicable diseases:
*Robert H. Riley, M. D., chief, Baltimore

Bureau of vital statistics:
Frederic V. Beitler, M. D., chief, Baltimore

Food and drug commissioner:
*A. L. Sullivan, B. S., chief, Baltimore

Bureau of bacteriology:
*H. C. Ward, B. Ph., M. S., chief, Baltimore.

Bureau of sanitary engineering:
*Abel Wolman, B. S. E., Chief, Baltimore.

Bureau of chemistry:
*Wyatt W. Randall, Ph. D., chief, Baltimore.

Bureau of personnel and accounts:
*Walter N. Kirkman, chief, Baltimore.

Bureau of child hygiene:
*J. H. Mason Knox, jr., M.D., chief, Baltimore.

Appropriations for fiscal year ending September 30, 1928:

Salaries	$258,202
Expenses	122,574
Emergency appropriation (epidemics, etc.)	10,000
Total	390,776

Publications issued by health department:
Annual report.
Weekly News Letter.

MASSACHUSETTS

Public health council:
George H. Bigelow, M. D., chairman, Boston.
Roger I. Lee, M. D., Boston.
Francis H. Lally, M. D., Milford.

Public health council—Continued.
Richard P. Strong, M. D., Boston.
Sylvester E. Ryan, M. D., Springfield.
James L. Tighe, Holyoke.
Gordon Hutchins, Concord.

Executive health officer:
*George H. Bigelow, M. D., State commissioner of public health, Boston.

Secretary:
*Alice M. Ethier.

Division of administration:
(Under direction of commissioner.)

Division of communicable diseases:
*Clarence L. Scamman, M. D., director, Boston.

Division of sanitary engineering:
*X. H. Goodnough, C. E., director and chief engineer, Boston.

Division of water and sewage laboratories:
*H. W. Clark, director and chemist, Boston.

Division of biologic laboratories:
*Benjamin White, Ph. D., director and pathologist, Boston.

Division of food and drugs:
*Herman C Lythgoe, director and analyst, Boston.

Division of hygiene:
*Merrill E. Champion, M. D., director, Boston.

Division of tuberculosis sanatoria:
*Sumner H. Remick, M. D., director, Boston.

Appropriations for department of public health, 1927:

Division of administration—	
Salary of commissioner	$7,500
Personal services	19,900
Services other than personal	10,000
Division of hygiene—	
Personal services of director and assistants	28,080
Services other than personal	15,500
Personal services in connection with maternal and infant hygiene	19,180
Expenses in connection with maternal and infant hygiene	9,600
Division of communicable diseases—	
Personal services of director, district health officers, etc	56,000
Services other than personal	15,250
Personal services in connection with control of venereal diseases	7,320
Expenses in connection with control of venereal diseases	21,500
Manufacture and distribution of arsphenamine—	
For personal services	8,610
Services other than personal	5,850
Wassermann Laboratory—	
For personal services	12,600
For expenses of laboratory	5,300
Antitoxin and vaccine laboratory—	
For personal services	50,355
Other services	34,500
Inspection of food and drugs—	
For personal services	44,000
Other services	11,400

Appropriations for department of public health, 1927—Continued.

Water supply and disposal of sewage, engineering division—	
For personal services	60,700
For other services	16,000
Water supply and disposal of sewage, division of water and sewage laboratories—	
For personal services	35,500
For other services	8,200
Division of tuberculosis—	
For personal services	32,420
Services other than personal	10,000
For personal services of tuberculosis clinic units	36,500
Services other than personal (clinic units)	16,700
Payment of subsidies	222,000
For maintenance of and for certain improvements at the Lakeville, North Reading, Rutland and Westfield State sanatoria	1,034,730
Special appropriations under legislative acts and resolves of 1927	19,500
Cancer clinics:	
For personal service	15,000
For other expenses	30,000
Cancer hospital at Norfolk:	
For maintenance	90,000
For completion of improvements required and for certain equipment	75,000
Total	2,085,295

MICHIGAN

Advisory council of health:
- C. C. Slemons, M. D., president, Grand Rapids.
- Robert B. Harkness, M. D., Houghton.
- Chalmers J. Lyons, D. D Sc., Ann Arbor.
- Leo J. Dretzka, M. D., Detroit.
- Louis J. Hirschman, M. D., Detroit.

Executive health officer:
- *Guy L. Kiefer, M. D., D. P. H., State health commissioner, Detroit.

Deputy health commissioner:
- *Don M. Griswold, M. D., D. P. H., Lansing.

Bureau of engineering:
- *E. D. Rich, C. E., director.
- *John M. Hepler, B. S., assistant engineer.
- *Willard F. Shephard, B. S. E., assistant engineer.
- *Raymond J. Faust, B. S., assistant engineer.
- *Herbert H. Hasson, B. S., assistant engineer.
- *F. B. Ransford, water inspector.

Bureau of laboratories:
- *C. C. Young, Ph. D., D. P. H., director.
- *Minna Crooks, R. N., bacteriologist.
- *Shan Ming Tao, D. Sc., assistant bacteriologist.
- *R. L. Kahn, D. Sc., immunologist.
- *Pearl Kendrick, M. S., bacteriologist, West Michigan division.
- *Ora Mills, bacteriologist, Houghton Branch.
- *E. F. Eldridge, M. S., chemist.
- *A. B. Haw, M. S., clinical pathologist.
- *Newton D. Larkum, Ph. D., research bacteriologist.

Bureau of laboratories—Continued.
- *Charles L. Bliss, B. S., toxicologist.
- *Bruce Robinson, superintendent, biologic plant.

Bureau of child hygiene and public health nursing:
- *Lillian R. Smith, M. D., director.
- *Florence H. Knowlton, M. D., physician.
- *Rhoda Grace Hendrick, M. D., prenatal consultant.
- *Helen de Spelder Moore, R. N., assistant director.

Bureau of records and statistics:
- *W. J. V. Deacon, M. D., director.

Bureau of education:
- *Marjorie Delavan, director.
- *Pearl Turner, assistant director.
- *Melita Hutzel, lecturer
- *Frank A. Poole, M. D., lecturer.

Bureau of embalming:
- *Frank J. Pienta, director.

Bureau of epidemiology:
- *Don M. Griswold, M. D., D. P. H., director.
- *A. M. Carr, M. D., medical inspector.
- *Paul F. Orr, M. D., medical inspector.

Bureau of mouth hygiene:
- *William R. Davis, D. D. S., director.

Appropriations for fiscal year ending June 30, 1928:

Personal service	$202,650.00
Supplies Contractual service	102,000.00
Outlay for equipment	7,000.00
Total	311,650.00
Antitoxin operation	65,000.00
Child hygiene and public health nursing	64,741.11
Grand total	441,391.11

Publications issued by health department:
- Monthly bulletin.
- Annual report.
- Communicable disease pamphlets.
- Sex hygiene pamphlets.
- Child hygiene pamphlets.
- Engineering bulletins.
- Mouth hygiene pamphlets.
- Scientific reprint series.
- Rules and regulations.
- Health officers' manual.

MINNESOTA

Board of health:
- S. Marx White, M. D., president, Minneapolis.
- L. P. Wolff, C. E., vice president, St. Paul.
- C. L. Scofield, M. D., Benson.
- N. M. Watson, M. D., Red Lake Falls.
- N. G. Mortensen, M. D., St. Paul.
- O. F. Mellby, M. D., Thief River Falls.
- W. H. Barr, M. D., Wells.
- E. W. Fahey, M. D., St. Paul.
- J. A. Thabes, M. D., Brainerd.

Executive health officer, Old Capitol, St. Paul:
- *A. J. Chesley, M. D., secretary and executive officer.

Division of administration, Old Capitol, St. Paul:
- *O. C. Pierson, director.

Division of vital statistics, Old Capitol, St. Paul:
*Gerda C. Pierson, director.
Division of hotel inspection, Old Capitol, St. Paul:
*W. A. Wittbecker, State hotel inspector.
Division of preventable diseases, university campus, Minneapolis:
*O. McDaniel, M. D., director.
*E. M. Wade, chief of laboratories.
*W. P. Greene, M. D., epidemiologist.
*Temple Burling, M. D., epidemiologist.
Division of sanitation, university campus, Minneapolis:
*H. A. Whittaker, director.
*O. E. Brownell, C. E., sanitary engineer.
Division of venereal diseases, university campus, Minneapolis:
H. G. Irvine, M. D., director.
Division of child hygiene, university campus, Minneapolis:
Everett C. Hartley, M. D., director.
*Oliva Peterson, R. N., superintendent of public health nursing.
*Mildred G. Smith, R. N., educational agent.
Appropriations for fiscal year ending June 30, 1928:
Maintenance and vital statistics—

Salaries	$31, 520	
Expenses	7, 595	
		$39, 115
Free antitoxin		14, 644
Venereal disease		17, 500
Sanitary engineering and laboratory		27, 160
Preventable diseases and laboratory		60, 856
Protection for maternity and infancy		21, 000
Hotel inspection		33, 590
Total		213, 865

Publications issued by health department:
Educational pamphlets.
Laboratories:
Division of preventable diseases, division of sanitation, and division of venereal diseases each has its own laboratory service. Laboratories are housed on university campus. The division of preventable diseases also has a branch laboratory at Duluth All are State department of health organizations exclusively.

MISSISSIPPI

Board of health:
W. W. Crawford, M. D., president, Hattiesburg.
Felix J. Underwood, M. D., secretary, Jackson.
S. E. Eason, M. D., New Albany.
L. B. Austin, M. D., Rosedale.
J. W. Lipscomb, M. D., Columbus.
T. W. Holmes, M. D., Winona.
J. M. Dampeer, M. D., Crystal Springs.
W. H. Watson, M. D., Brandon.
Dudley Stennis, M. D., Newton.
W. R. Wright, D. D. S., Jackson.
Executive health officer:
*Felix J. Underwood, M. D., executive officer, State board of health, Jackson.
Bureau of vital statistics:
*R. N. Whitfield, M. D., director, Jackson.
Bureau of child hygiene and public health nursing:
*Felix J. Underwood, M. D., acting director Jackson.
*Mary D. Osborne, R. N., supervisor, public health nursing, Jackson.
*Gladys Eyrich, supervisor oral hygiene.
Hygienic laboratory:
*T. W. Kemmerer, M. D., director, Jackson.
Bureau of sanitary engineering and inspection:
*H. A. Kroeze, C. E., director, Jackson.
*Geo. Parker, C. E., malarial control engineer, Jackson.
*N. M. Parker, D. V. S., State sanitary inspector, Jackson.
Bureau of county health work:
*C. C. Applewhite, M. D., director, Jackson.
Bureau of communicable diseases:
*Hardie Hayes, M. D., director, Jackson.
Appropriations for fiscal year ending Dec. 31, 1927:

Administrative office	$20, 700
Bureau of vital statistics	12, 000
Municipal sanitation	10, 800
Rural sanitation	34, 300
Hygienic laboratory	20, 000
Child welfare	27, 000
Communicable diseases	10, 000
Total	134, 800

Publications issued by health department:
Biennial report.
Weekly health letters published in all newspapers of the State.
Laboratory is not connected with an educational institution.

MISSOURI

Board of health:
W. A. Clark, M. D., president, Jefferson City.
H. L. Kerr, M. D., vice president, Crane.
James Stewart, M. D., secretary, Jefferson City
H. S. Gove, M. D., Linn.
H. A. Breyfogle, M. D., Kansas City.
T. E. McGough, M. D., Richmond.
Willard C. Bartlett, M. D., St. Louis.
Executive health officer:
*James Stewart, M. D., State health commissioner, Jefferson City.
*Irl Brown Krause, M. D., assistant State health commissioner.
Rural sanitation:
*Joseph Mountin, M. D., director.
Epidemiology:
*R. L. Russell, M. D., assistant epidemiologist.
*R. L. Laybourn, bacteriologist.
Sanitary engineering:
*W. Scott Johnson, chief engineer.
Vital statistics:
*Ross Hopkins, M. D., statistician.
Child hygiene:
*Irl Brown Krause, M. D., director.

Appropriations for biennial period ending Dec. 31, 1928:

Board of health—

Licensure	$20,000
Salaries	85,800
Contingent	32,000
Cooperative health work	100,000
Control of contagion	50,000
Total	287,800

Of the above appropriation, $47,000 is being withheld by the governor until State revenues are sufficient for release.

MONTANA

Board of Health:
- B. L. Pampel, M. D., president, Livingston.
- George M. Jennings, M. D., vice president, Missoula.
- E. M. Porter, M. D., Great Falls.
- L. H. Fligman, M. D., Helena.
- E. G. Balsam, M. D., Billings.

Executive health officer:
- *W. F. Cogswell, M. D., secretary, Helena.

Division of communicable diseases:
- *W. F. Cogswell, M. D., director, Helena.

Division of child welfare:
- *Hazel Dell Bonness, M. D., director, Helena.

Division of food and drugs:
- *Glenn D. Wiles, director, Helena.

Division of vital statistics:
- *W. F. Cogswell, M. D., State registrar, Helena.
- *L. L. Benepe, deputy State registrar, Helena.

Division of water and sewage:
- *H. B. Foote, director, Helena.
- W. M. Cobleigh, consultant, Bozeman.
- *E. L. Grant, analyst, Helena.

Hygienic laboratory:
- *Fred D. Stimpert, director, Helena.
- *Edith Kuhns, technician, Helena.

Appropriations for the years ending June 30, 1928, and June 30, 1929:

Salaries	$24,900
Operating expenses	6,900
Capital expenditures	200
Repairs	75
Division child welfare	10,700
Board of entomology (Rocky Mountain spotted-fever work)	23,320
Spotted-fever laboratory	60,000
Total	126,095

Other sources of revenue:
- All fees collected by State board of health.
- Rockefeller Foundation, $3,650.

Publications issued by health department:
- Special bulletins on communicable diseases.
- Biennial report.

The State board of health laboratory is located in the State board of health building at Helena.

NEBRASKA

Department of public welfare:
- Lincoln Frost, secretary, Lincoln.
  - Bureau of health—
    - Executive health officer—
      - *W. H. Wilson, M. D., chief, bureau of health, Lincoln.
    - Collaborating epidemiologist—
      - *W. H. Wilson, M. D., Lincoln.
    - Assistant epidemiologist—
      - *P. H. Bartholomew, M. D., Lincoln.
    - Bacteriologist—
      - *L. O. Vose, Lincoln.
    - Division of laboratories—
      - *L. O. Vose, director, Lincoln.
    - Division of venereal diseases—
      - *P. H. Bartholomew, M. D., director, Lincoln.
    - Statistician—
      - *Hattie M. Summers, Lincoln.
    - Division of child hygiene—
      - *Louise M. Murphy, R. N., director, Lincoln.
    - Medical examining board—
      - J. E. Spatz, M. D., Fairfield.
      - H. J. Lehnhoff, M. D., Lincoln.
      - E. T. McGuire, M. D., Mead.

Appropriations for biennial period ending June 30, 1929:

Salaries	$42,000
Maintenance	22,800
Total	64,800

The laboratory is not connected with an educational institution.

NEVADA

State board of health:
- F. B. Balzar, governor, president, Carson City.
- Edward E. Hamer, M. D., secretary and State health officer, Carson City.
- W. G. Greathouse, secretary of State.

Executive health officer:
- Edward E. Hamer, M. D., Carson City.

State hygenic laboratory at State university:
- *Vera E. Lautenschlager, acting director, Reno.

Appropriations for 1927 and 1928:

Salary of secretary	$5,000
For State board of health	3,600
For purchase of diphtheria antitoxin for free distribution	500
Total	9,100

Publications issued by health department:
- Biennial report.
- Special bulletins.

NEW HAMPSHIRE

Board of health:
- Robert Fletcher, C. E., president, Hanover.
- D. E. Sullivan, M. D., Concord.
- George C. Wilkins, M. D., Manchester.
- Sibley G. Morrill, M. D., Concord.
- Huntley M. Spaulding, governor.
- Jeremy M. Waldron, attorney general, Portsmouth.

Executive health officer:
- *Charles Duncan, M. D., secretary, State board of health, Concord.
- *Harriet I. Parkhurst, chief clerk, Concord.

Division of maternity, infancy, and child hygiene:
- *Mary D. Davis, R. N., director and supervising nurse, Manchester.

Department of vital statistics:
- *Charles Duncan, M. D., registrar, Concord.
- *Bertha M. Watson, chief clerk, Concord.

Division of chemistry and sanitation:
- *Charles D. Howard, chief of division, Concord.
- *Nathan Civen, assistant chemist, Concord.
- *Herbert R. Hill, assistant chemist and bacteriologist, Concord.
- *Leonard W. Trager, assistant sanitary engineer, Concord.
- *Joseph X. Duval, chief inspector, Concord.
- Diagnostic and pathological department—
  - *William R. McLeod, serologist and diagnostic bacteriologist, Concord.
  - H. N. Kingsford, M. D., pathologist, Hanover.
  - *Benj. Jewell, assistant in pathological laboratory, Concord.

Venereal-disease division:
- *Charles A. Weaver, M. D., Manchester.

Appropriations for fiscal year ending June 30, 1928:

State board of health	$36,938
Laboratory of hygiene	16,300
Vital statistics	6,050
Total	59,288

Publications issued by health department:
- Bulletin.
- Biennial report.

Laboratory is not connected with any educational institution.

NEW JERSEY

Board of health:
- Clyde Potts, C. E., president, Morristown.
- Charles I. Lafferty, vice president, Atlantic City.
- David D. Chandler, Newark.
- H. E. Winter, V. M. D., Plainfield.
- J. Oliver McDonald, M. D., Trenton.
- Harold J. Harder, C. E., Paterson.
- S. A. Cosgrove, M. D., Jersey City.
- Mrs. Helen M. Berry, Newark.
- Miss Margaret McNaughton, Jersey City.
- J. E. H. Guthrie, D. D. S., Newark.
- J. Lynn Mahaffey, M. D., Camden.

Executive health officer:
- *David C. Bowen, director of health, Trenton.

Bureau of bacteriology:
- *John V. Mulcahy, chief, Trenton.

Bureau of chemistry:
- *John E. Bacon, chief, Trenton.

Bureau of administration:
- *Charles J. Merrell, chief, Trenton.

Bureau of food and drugs:
- *Walter W. Scofield, chief, Trenton.

Bureau of child hygiene:
- Julius Levy, M. D., consultant, Trenton.

Bureau of local health administration:
- *David C. Bowen, chief, Trenton.

Bureau of engineering:
- *H. P. Croft, chief, Trenton.

Bureau of vital statistics:
- *David S. South, chief, Trenton.

Bureau of venereal disease control:
- A. J. Casselman, M. D., consultant, Trenton.

Appropriations for fiscal year ending June 30, 1928:

Salaries	$184,750
Miscellaneous	55,200
Child hygiene	94,000
Venereal disease control	28,240
Total	362,190

Publications issued by health department:
- Monthly bulletin.
- Annual report.

NEW MEXICO

Board of public welfare:
- R. O. Brown, M. D., chairman, Santa Fe.
- Mrs. Francis C. Wilson, vice chairman, Santa Fe.
- Mrs. Alice M. Shortle, secretary, Albuquerque.
- Joseph Gill, Albuquerque.
- H. A. Miller, M. D., Clovis.

Executive health officer.
- *G. S. Luckett, M. D., director of public health, Santa Fe.

Division of preventable diseases:
- *G. S. Luckett, M. D., chief, Santa Fe.

Division of vital statistics.
- *P. M. Ruleau, chief, Santa Fe.

Division of sanitary engineering and sanitation:
- *Paul S. Fox, M. S. in C. E., chief, Santa Fe.

Division of public health nursing and child hygiene:
- *Dorothy R. Anderson, R. N., Santa Fe.

Division of county health work:
- *D. B. Williams, M. D., chief, Santa Fe.

Public health laboratory:
- *Myrtle Greenfield, M. S., chief, Albuquerque.

Appropriation for years 1928 and 1929, per annum, $28,000. Fiscal year ends June 30.

The public health laboratory is located at the University of New Mexico, is furnished quarters, light, heat, and electric current by the University, but is otherwise maintained by the State bureau of public health. Its staff does not engage in teaching.

NEW YORK

Public health council:
- Simon Flexner, M. D., LL. D., chairman, New York.
- Homer Folks, LL. D., vice chairman, Yonkers.
- Edward H. Marsh, M. D., secretary, Albany.
- Henry N. Ogden, C. E., Ithaca.
- Frederick F. Russell, M. D., New York.

Public health council—Continued.
Jacob Goldberg, M. D., Buffalo.
Stanton P. Hull, M. D., Petersburg.
Matthias Nicoll, jr., M. D., (ex officio) commissioner of health, Albany.
Executive health officer:
*Matthias Nicoll, jr., M. D., commissioner of health, Albany.
Deputy commissioner of health:
*Paul B. Brooks, M. D., Albany.
Secretary:
*Edward H. Marsh, M. D., Albany.
Executive officer:
*Fenimore D. Beagle, Albany.
Division of public health education:
*B. R. Rickards, S. B., director, Albany.
Division of sanitation:
*Charles A. Holmquist, C. E., director, Albany.
Division of vital statistics:
*Joseph V. De Porte, Ph. D., director, Albany.
Division of child hygiene:
*Elizabeth M. Gardiner, M. D., director, Albany.
Division of communicable diseases:
*Edward S. Godfrey, M. D., director, Albany.
Division of tuberculosis:
*Robert Plunkett, M. D., director, Albany.
Division of social hygiene:
*Albert Pfeiffer, M. D., director, Albany.
Division of laboratories and research:
*Augustus B. Wadsworth, M. D., director, Albany.
Division of public health nursing:
*Mathilde S. Kuhlman, R. N., director, Albany.
Institute for the study of malignant disease, Buffalo, N. Y.:
Burton T. Simpson, M. D., director.
Appropriations for fiscal year ending June 30, 1928:

Personal service	$1,023,380.00
Maintenance and operation	477,000.00
For State aid to county laboratories	110,000.00
Investigation of oyster beds	5,000.00
State aid to county health activities	91,733.09
Physically handicapped children	20,000.00
Total	1,727,113.09

Other sources of revenue:
Fees from certified transcript of birth, death, and marriage certificates, $1,561 per annum.
Licensing laboratories, $379.
Sale of serums, $3,035.
Licensing embalmers and undertakers (six months) $3,599.
Publications issued by health department:
Weekly Health News.
Monthly Vital Statistics Review.
Annual Report.

NORTH CAROLINA

Board of health:
——— ———, president.
Thomas E. Anderson, M. D., Statesville.
A. J. Crowell, M. D., Charlotte.
E. J. Tucker, D. D. S., Roxboro.

Board of health—Continued.
Cyrus Thompson, M. D., Jacksonville.
D. A. Stanton, M. D., High Point.
James P. Stowe, Ph. G., Charlotte.
John B. Wright, M. D., Raleigh.
L. E. McDaniel, M. D., Jackson.
Executive health officer:
*Charles O'H. Laughinghouse, M. D., secretary-treasurer and State health officer, Raleigh.
*Ronald B. Wilson, assistant secretary, Raleigh.
Laboratory of hygiene:
*C. A. Shore, M. D., director, Raleigh.
Deputy State registrar:
*F. M. Register, M. D., Raleigh.
Bureau of engineering and inspection:
*H. E. Miller, C. E., director, Raleigh.
Bureau of maternity and infancy:
*George Collins, M. D., director, Raleigh.
Bureau of health education:
*G. M. Cooper, M. D., director, Raleigh.
Bureau of county health work:
*C. N. Sisk, M. D., director, Raleigh.
Bureau of epidemiology:
*H. A. Taylor, M. D., Raleigh.
Appropriations for fiscal year ending June 30, 1928:

Administration	$52,500
Vital statistics	31,400
Laboratory of hygiene	70,000
School inspection	60,000
County health work	106,000
Epidemiology	12,500
Maternity and infancy	22,260
Engineering and inspection	60,000
Health education	11,740
Malaria control and survey	15,000
Total	441,400

Other sources of revenue:

International health board	10,000
Federal Government	83,000
Fees paid the laboratory	32,000

Publications issued by health department:
Monthly bulletin: The Health Bulletin.
Special bulletins.
Biennial report.

NORTH DAKOTA

Advisory health council:
Bertha R. Palmer, superintendent public instruction, ex officio, Bismarck.
J. Grassick, M. D., president North Dakota Tuberculosis Association, ex officio, Grand Forks.
Arne Oftedal, M. D., Fargo.
Fannie Dunn Quain, M. D., Bismarck.
R. S. Towne, D. D. S., Bismarck.
Executive health officer:
*A. A. Whittemore, M. D., State health officer, Bismarck.
Child hygiene and public health nursing:
*Maysil M. Williams, M. D., director, Bismarck.
Bureau of venereal diseases:
*F. R. Smyth, acting assistant surgeon, U. S. P. H. S., director, Bismarck.
Bureau of vital statistics:
*Myrtle C. Lee, director.

Appropriations for biennial period ending June 30, 1927:

Salaries—

State health officer, per year	$3,600
Clerical assistants, per year	5,200
Maintenance	6,000
Maternity and child hygiene, per year	1,500
Appropriation for venereal disease work, per year	4,200

Laboratories are connected with the university.

OHIO

Public health council:
John E. Monger, M. D., chairman, Columbus.
James E. Bauman, secretary.
G. D. Lummis, M. D.
C. O. Probst, M. D.
R. M. Calfee.
W. I. Jones, D. D. S.

Executive health officer:
*John E. Monger, M. D., director of health, Columbus.

Assistant director of health:
*James E. Bauman.

Division of administration:
*James E. Bauman, chief.
*C. A. Orrison, chief clerk.
Bureau of publicity—
*Paul Mason, director.
Bureau of local health organization—
*E. R. Shaffer, M. D., chief.

Division of communicable diseases:
*C. P. Robbins, M. D., chief.
*T. W. Mahoney, M. D., chief epidemiologist.
Bureau of venereal diseases—
*C. P. Robbins, M. D., chief.
Bureau of trachoma clinics—
*R. B. Tate, M. D., chief.

Division of sanitary engineering:
*F. H. Waring, chief.
Bureau of plumbing inspection—
*A. A. Manchester, chief.

Division of laboratories:
*Fred Berry, chief.

Division of vital statistics:
*Irvin C. Plummer, chief.

Division of hygiene:
*J. A. Frank, M. D., chief.
Bureau of tuberculosis—
H. M. Austin, M. D., chief.
Bureau of hospitals—
*James A. Weis, chief.

Division of child hygiene:
——— ———
Bureau of public health education—
*A. B. Lippert, M. D., chief.

Division of public health nursing:
*Zoe McCaleb, R. N., chief.

Division of industrial hygiene:
E. R. Hayhurst, M. D., consultant.

Appropriations for 18 months ending Dec. 30, 1928:

Personal service	$205,730.00
Maintenance	107,923.88
State aid for health districts	375,000.00
Total	868,653.88

Publications issued by health department:
Ohio Health News (semimonthly).

OKLAHOMA

Executive health officer:
*O. O. Hammonds, M. D., State health commissioner, Oklahoma City.

Assistant State health commissioner:
*J. P. Folan, Oklahoma City.

Bureau of vital statistics:
*W. B. Dennis, registrar, Oklahoma City.

Bureau of laboratories:
*H. C. Ricks, M. D., director of laboratory.

Bureau of maternity and infancy:
*Lucille Spiro Blachly, M. D., director.

Bureau of venereal disease control:
A. M. Young, M. D., director.

Bureau of rural sanitation:
*D. T. Bowden, M. D., director.

Bureau of sanitary engineering:
*H. J. Darcey, director.

Bureau of public health education:
*G. Harrison, director.

Bureau of epidemiology:
*G. F. Mathews, M. D.

Appropriations for fiscal year ending June 30, 1928:

Administration—	
Commissioner	$3,600
Assistant commissioner	2,400
Secretary and stenographer	1,800
Bookkeeper	2,000
Stenographers (1 at $1,800, 1 at $1,500, and 1 at $1,200)	4,500
Bureau of public health education—	
Director	2,400
Stenographer	1,500
Bureau of diagnostic laboratory—	
Chemist	3,000
Assistant chemist	2,400
Bacteriologist	3,000
Assistant bacteriologist	2,400
Record clerk	1,800
Extra help—manufacture of typhoid vaccine—janitor	2,500
Bureau of sanitary engineering—	
Engineer	3,000
Bureau of pure food, drugs, and sanitary inspection—	
Supervisor (sanitary engineer)	2,400
Inspectors (4 at $1,800 each)	7,200
Bureau of vital statistics—	
Registrar	2,400
Assistant registrar	1,800
Statistical clerks (3 at $1,500 each)	4,500
Bureau of maternity and infancy—	
Director (physician)	3,000
Stenographer	1,500
Head nurse	2,400
Field nurses (4 at $1,800 each)	7,200
Contingent aid to county health units	5,000
All bureaus—	
Traveling	14,000
Communication	2,500
Printing, other than office supplies	3,000
For expense of operation of laboratory	2,100
Office supplies	1,000
Medical supplies	6,000

Appropriations for fiscal year ending June 30, 1928—Continued.

All bureaus—Continued.

Supplies for the manufacture of vaccines	500
Office equipment	750
Laboratory equipment	600
Motor vehicle	800
Unallocated appropriations—	
Bureau for control of venereal diseases	7,000
Bureau of epidemiology disease prevention	5,000
Rural sanitation, mouth hygiene, and disease prevention in rural district and county health units	21,575
Control of malaria	5,000
Total	143,525

OREGON

Board of health:

W. B. Morse, M. D., president, Salem.
E. B. Pickel, M. D., vice president, Medford.
Frederick D. Stricker, M. D., secretary and State health officer, Portland.
W. T. Phy, M. D., Hot Lake.
J. H. Rosenberg, M. D., Prineville.
C. J. Smith, M. D., Portland.
Harold C. Bean, M. D., Portland.

Executive health officer:
*Frederick D. Stricker, M. D., secretary and State health officer, Portland.

Registrar of vital statistics:
*Frederick D. Stricker, M. D., Portland.

Division of child hygiene and public health nursing:
*Mrs. Glendora Blakely, R. N., Portland.

Director of laboratory:
*William Levin, D. P. H., Portland.

Appropriations for fiscal year ending December 31, 1927, $44,765.

Publications issued by health department:
Annual report.
Biennial report.
Pamphlets and posters.
Weekly letter.

PENNSYLVANIA

Department of health:

Advisory board—
A. A. Cairns, M. D., Philadelphia.
S. R. Haythorn, M. D., Pittsburgh.
J. M. Wainwright, M. D., Scranton.
H. C. Frontz, M. D., Huntingdon.
C. B. Auel, East Pittsburgh.
Charles F. Mebus, C. E., Abington.

Executive health officer—
*Theodore B. Appel, M. D., secretary of health, Harrisburg.
*William G. Turnbull, deputy secretary of health, Harrisburg.

Bureau of sanatoria and State clinics—
*William G. Turnbull, M. D., Harrisburg.
Section State clinics—
*William C. Miller, M. D., Mechanicsburg.
Mont Alto sanatorium—
*R. H. McCutcheon, M. D., medical director, Mont Alto.

Department of health—Continued.

Bureau of sanatoria and State clinics—Con.
Cresson sanatorium—
*T. H. A. Stites, M. D., medical director, Cresson.
Hamburg sanatorium—
*Henry A. Gorman, M. D., medical director, Hamburg.

Bureau of communicable diseases—
*J. Moore Campbell, M. D., Harrisburg.
Section of epidemiology—
*J. Moore Campbell, M. D.
Tuberculosis section—
———— ————————
Genito-urinary section—
*Edgar S. Everhart, M. D., Lemoyne.
Section of restaurant hygiene—
*Howard M. Haines, Harrisburg.

Bureau of engineering—
*W. L. Stevenson, C. E., chief engineer, Harrisburg.
Section sanitary engineering—
*H. E. Moses, Harrisburg.
Section of housing—
*H. F. Bronson, Harrisburg.
Section milk control—
*Ralph E. Irwin, Camp Hill.
Section industrial waste—
*F. E. Daniels, Harrisburg.

Bureau of child health—
*J. Bruce McCreary, M. D., Shippensburg.
School section—
*J. Bruce McCreary, M. D.
Pre-school section—
*Mary Riggs Noble, M. D.
Dental section—
*C. J. Hollister, D. D. S.

Bureau of finance—
*Clinton T. Williams, Harrisburg.
Section of accounts—
*C. T. Williams.
Purchasing section—
*L. G. Owens, Harrisburg.
Section of supplies—
*Roy G. Miller, Harrisburg.

Bureau of vital statistics—
*Emlyn Jones, M. D., Johnstown.

Bureau of laboratories—
*John L. Laird, M. D., Philadelphia.

Bureau of drug control—
*James N. Lightner, LL. B., Lancaster.

Bureau of nursing—
*Alice M. O'Halloran, R. N., Harrisburg.

Bureau of inspection—
*James Duffy, Marietta.

Bureau of public health education—
*J. C. Funk, LL. B., Harrisburg.

Appropriations for biennial period ending June 1, 1929:

General health purposes	$4,770,000
Construction crippled children's hospital	350,000
Sanitary water board	150,000
Total	5,270,000

Laboratories are not connected with any university.

PHILIPPINE ISLANDS

Director of health:
- Jacobo Fajardo, M. D., Manila.

Council of hygiene, advisory board to the director of health:
- Fernando Calderon, M. D., president, Manila.
- Regino G. Padua, M. D., secretary, Manila.
- José Fabella, M. D., Manila.
- Gervasio Ocampo, M. D., Manila.
- José Albert, M. D., Manila.
- Benito Valdes, M. D., Manila.
- Eulogio P. Revilla, LL. B., Manila.
- Tomas Earnshaw, Manila.

Executive officer:
- *Jacobo Fajardo, M. D., Manila.

Assistant to the director:
- *Regino G. Padua, M. D., Manila.

Office of records and finance:
- *Mamerto Tianco, chief, Manila.

Office of property:
- *Bonifacio Mencias, M. D., acting chief, Manila.

Office of vital statistics:
- *José Guidote, M. D., chief, Manila.

Office of general inspection:
- *Rafael Villafranca, M. D., chief, Manila.

Public health education and publicity:
- *José P. Bantug, M. D., chief, Manila.

Public health nursing:
- *Rosario Pastor, M. D., chief, Manila.

Division of communicable diseases:
- *Leoncio Lopez Rizal, M. D., chief, Manila.

Division of metropolitan sanitation:
- *Eugenio Hernando, M. D., chief, Manila.

Division of hospitals, dispensaries, and laboratories:
- *Eusebio D. Aguilar, M. D., chief, Manila.

Culion Leper Colony:
- *Sulpicio Chiyuto, M. D., chief, Manila.

Division of provincial sanitation:
- *Gabriel Intengan, M. D., chief, Manila.

Office of sanitary engineering:
- *Manuel Mañosa, C. E., chief, Manila.

Appropriations for fiscal year ending December 31, 1927:

Salaries and wages		$928, 242
Miscellaneous expenses		1, 788, 570
Furniture and equipment		25, 000
Special expenses—		
Purchase of an ambulance, refrigerator, tank, and pump for San Lazaro Hospital	$15, 000	
Continuation of treatment of segregated lepers	250, 000	
Aid to specially organized Provinces	436, 600	
School of nursing in Baguio	10, 000	
Medicines, medical and surgical supplies for distribution to public-school dispensaries	5, 000	
Demonstration on practical control of malaria and beriberi and improvement of organization and operation of sanitation in connection with the sum allotted for this purpose by the Rockefeller foundation	25, 000	
Contribution to the University of the Philippines for the operation of the School of Sanitation and Public Health	20, 000	
Control of malaria in the regularly and specially organized Provinces and municipalities and municipal districts	100, 000	
Total for special expenses		861, 600
Grand total of appropriations		3, 603, 412

Publications issued by the Philippine health service:
- Daily Service News.
- Weekly comparative epidemological résumé.
- Weekly résumé of births and deaths.
- Monthly bulletin.
- Annual report.
- Occasional pamphlets.

Laboratory is located at the San Lazaro Hospital, Manila, and not connected with the State university or any other similar educational institution.

PORTO RICO

Insular board of health:
- Gustavo Muñoz Diaz, M. D., president, San Juan.
- Louis B. de la Vega, M. D., secretary, San Juan.
- Angel M. Pesquera, pharmacist, San Juan.
- W. A. Glines, M. D., San Juan.
- A. Martinez Alvarez, M. D., San Juan.
- José López Acosta, San Juan.
- G. A. Ramirez de Arellano, San Juan.
- M. Roses Artau, M. D., San Juan.

Executive health officer:
- *Pedro N. Ortiz, M. D., commissioner of health, San Juan.
- *A. Fermós Isern, M. D., assistant commissioner of health, San Juan.

Division of property and accounts:
- *Abelardo Santiago, chief, San Juan.

Division of sanitary engineering:
- *Octavio Marcano, sanitary engineer, San Juan.

Bacteriological laboratory:
- *Pablo Morales Otero, M. D., director, San Juan.

Chemical laboratory:
- *R. del Valle Sárraga, chemist, director, San Juan.

Division of transmissible diseases:
- *M. O. de la Rosa, M. D., chief, San Juan.

Bureau of statistics:
- *Manuel A. Perez, chief, San Juan.

Appropriations for each of the fiscal years ending June 30, 1928, and June 30, 1929:

Office of the commissioner of health	$276,490.00
Leper hospital	34,166.50
Quarantine hospital	12,684.00
Antituberculosis sanatorium of Porto Rico	139,144.00
Blind asylum	41,060.00
Institute for blind children	25,080.00
Insane asylum	116,235.00
Education and maintenance of poor deaf and dumb children	1,200.00
Care of tubercular patients in the sanatorium at Ponce under the control of the department of health	15,000.00
Control and prevention of tuberculosis	75,000.00
Control and prevention of venereal diseases	12,000.00
Prevention of infantile mortality	50,000.00
Extermination of mosquitoes and control and suppression of malaria	50,000.00
Suppression of anemia	150,000.00
Extermination of rats	20,000.00
Control and suppression of infantile tetanus and ophthalmia neonatorum	2,000.00
Emergency fund for the control and suppression of epidemics	10,000.00
Girls' charity school	84,178.00
Boys' charity school	112,131.00
Sanitation fund, trust fund	164,100.82
Total	1,390,469.32

RHODE ISLAND

Board of health:
- William F. Williams, M. D., president, Bristol.
- Joseph M. Bennett, M. D., vice president, Providence.
- Thomas J. McLaughlin, M. D., Woonsocket.
- John Champlin, jr., M. D., Westerly.
- Berton W. Storrs, M. D., Portsmouth.
- M. S. Budlong, M. D., Providence.
- R. Morton Smith, M. D., Riverpoint.

Executive health officer:
- ***B. U. Richards, M. D.**, secretary, State board of health, State commissioner of health, and State registrar, Statehouse, Providence.

Pathologist:
- Lester A. Round, Ph.D., Providence.

Chemist:
- Stephen De M. Gage, Providence.

Appropriations for fiscal year ending Nov. 30, 1926:

Executive department	$30,000
Chemical laboratory	18,000
Pathological laboratory	20,000
Child welfare	10,000
Venereal diseases	10,000
Total	88,000

Laboratory of State board of health is not connected with any institution.

SOUTH CAROLINA

Executive committee, board of health:
- Robert Wilson, jr., M. D., chairman, Charleston.
- L. D. Boone, M. D., Langley.
- Davis Furman, M. D., Greenville.
- E. A. Hines, M. D., Seneca.
- W. R. Wallace, M. D., Chester.
- Wm. Egleston, M. D., Hartsville.
- Sam. Hodges, Ph. G., Greenwood.
- F. M. Routh, M. D., Columbia.
- George Dick, D. D. S., Sumter.
- Jno M. Daniel, Atty. Gen., Columbia.
- A. J. Beattie, Compt. Gen., Columbia.

Executive health officer:
- ***James A. Hayne, M. D.**, State health officer, Columbia.

Department of county health units:
- *Ben F. Wyman, M. D., director, Columbia.

Bureau of child hygiene:
- *Miss Ada Taylor Graham, R. N., supervisor of public health nursing, Columbia.

Laboratory department:
- *H. M. Smith, M. D., in charge, Columbia.
- *J. R. Cain, chief bacteriologist, Columbia.

Bureau of vital statistics:
- *C. W. Miller, chief clerk, Columbia.

Bacteriologist and chemist:
- F. L. Parker, jr., M. D , Ph. D., Columbia.

South Carolina Sanitorium:
- *Ernest Cooper, M. D., superintendent, Columbia.

Epidemiologist:
- *A. H. Hayden, M. D., Columbia.

Sanitary engineer:
- *A. E. Legare, C. E., Columbia.

Appropriations for fiscal year ending Dec. 31, 1927:

Administrative office	$53,205.30
Bureau of child hygiene	13,000.00
Bureau of vital statistics	7,985.00
Laboratory	11,830.00
Bureau of rural sanitation	27,255.44
Division of sanitary engineering	23,420.00
Tuberculosis sanatoria	86,350.00
Hotel inspection	1,380.00
Aid for crippled children	10,000.00
Child placing bureau	16,350.00
Total	252,775.74

Publications issued by health department:
- Annual report.
- Bulletins of various departments.

SOUTH DAKOTA

Board of health:
- F. E. Clough, M. D., president, Lead.
- A. C. Clark, M. D., vice president, Woonsocket.
- H. R. Kenaston, M. D., Bonesteel.
- P. B. Jenkins, M. D., superintendent, Waubay.

Executive health officer:
- *Park B. Jenkins, M. D., Waubay.

Division of vital statistics:
- *Park B. Jenkins, M. D., Waubay.

Division of records and accounts:
- *Edna Jenkins.

Division of medical licensure:
- H. R. Kenaston, M. D.

Laboratories: (at Vermilion).
- J. C. Ohlmacher, M. D.

Division of child hygiene:
- Florence E. Walker, R. N.

Appropriations:	1927-28	1928-29
Salaries and wages	$17,100	$17,100
Supplies and materials	2,500	2,500
Communication and travel	4,000	4,000
Printing, binding, and advertising	1,500	1,500
Light and power	250	250
Rents	1,560	1,560
Dues	50	50
Crippled children	2,500	2,500
Total	29,460	29,460

Laboratories at Vermillion connected with State university.

TENNESSEE

Department of public health:
- *E. L. Bishop, M. D., C. P. H., commissioner, Nashville.

Division of epidemiology:
- *H. C. Stewart, M. D., C. P. H., director, Nashville.

Division of local organization:
- *W. K. Sharp, jr., M. D., director, Nashville.

Division of vital statistics:
- *J. B. Bond, M. D., director, Nashville.

Division of laboratories:
- *William Litterer, M. D., director, Nashville.

Division of sanitary engineering:
- *Howard R. Fullerton, C. E., director, Nashville.

Division of health education:
- *A. F. Richards, M. D., director, Nashville.

Division of child hygiene and public health nursing:
- *W. J. Breeding, M. D., director, Nashville.
- *Miss M. G. Nisbet, R. N., State supervising nurse, Nashville.

Appropriation for the fiscal period July 1, 1927, to June 30, 1929:

General administration	$31,000
Vital statistics	37,200
Sanitary engineering	36,200
Laboratories	47,840
Health education	12,400
Epidemiology	17,200
Local organization	148,400
Child hygiene and public health nursing	60,000
Tuberculosis control	90,000
Total	480,240

Other sources of revenue:
- United States Department of Labor, maternity and child welfare, $25,767.55 per annum.
- International Health Board, $22,500 (variable) per annum.
- International Health Board, cooperation in malarial control, epidemiology and local organization, vital statistics. United States Public Health Service in malaria control. Individual counties and cities in State cooperation in malaria control, county health work and child hygiene and public health nursing. United States Public Health Service, cooperation in county health work, $8,000 per annum.

State laboratory is in Nashville. Branch laboratories are maintained in East Tennessee (Knoxville); West Tennessee (Memphis); Southeast Tennessee (Chattanooga), in conjunction with city health departments.

TEXAS

Board of health:
- J. M. Frazier, M. D., Belton
- W. A. King, M. D., San Antonio.
- A. A. Ross, M. D., Lockhart.
- Joe Gilbert, M. D., Austin.
- C. M. Rosser, M. D., Dallas.
- E. W. Wright, M. D., Bowie.
- J. C. Anderson, M. D., ex officio, State health officer.

Executive health officer:
- *J. C. Anderson, M. D., State health officer, Austin.

Bureau of child hygiene:
- *H. N. Barnett, M. D., director.

Bureau of vital statistics:
- *C. E. Durham, M. D., director.

Bureau of communicable diseases and hygienic laboratory:
- *Livingstone Anderson, M. D., director.

Bureau of sanitary engineering:
- *V. M. Ehlers, C. E., director.

Bureau of pure foods and drugs:
- *E. H. Golaz, director.

Appropriations for fiscal year ending August 31, 1928:

General fund	$132,640.00
Special fund	77,901.04
Total	210,541.04

UTAH

Board of health:
- Fred Stauffer, M. D., president, Salt Lake City.
- T. B. Beatty, M. D., secretary, Salt Lake City.
- Joseph R. Morrell, M D., Ogden.
- O. E. McDermid, M. D., Castle Gate.
- Carl Hopkins, Ogden.
- S. S. Burnham, D. D. S., Salt Lake City.
- Chas. J. Ullrich, C. E., Salt Lake City.

Executive health officer:
- *T. B. Beatty, M. D., State health commissioner, Salt Lake City.

Bureau of vital statistics:
- *T. B. Beatty, M. D., State registrar.
- *Anna M. Bowen, deputy registrar.

Bureau of child hygiene:
- *H. Y. Richards, M. D., director.

Epidemiologist:

*——————.

Sanitary engineer:

*Leonard H. Male.

Bacteriological laboratory:

*E. H. Bramhall, bacteriologist.

Appropriations for year ending June 30, 1928:

Salaries	$20,000
Office expense	4,000
Travel	1,450
Equipment	500
Child hygiene	6,500
Total	32,450

Publications issued by health department:

Quarterly bulletin.

Biennial report.

Fiscal year ends June 30.

Laboratory is not connected with State university or other educational institution.

VERMONT

Board of health:

Edward J. Rogers, M. D., chairman, Pittsford.

William G. Ricker, M. D., St. Johnsbury.

John P. Gifford, M. D., Randolph.

Executive health officer:

*Charles F. Dalton, M. D., secretary, State board of health, Burlington.

Laboratory of hygiene:

*Charles F. Whitney, M. D., director, Burlington.

Sanitary engineering:

J. W. Votey, C. E., Burlington.

Sanitary inspector:

*Fred S. Kent, M. D., Burlington.

Division of communicable diseases:

*Fred S. Kent, M. D., Burlington.

Division of tuberculosis:

*H. W. Slocum, Burlington.

Division of poliomyelitis.

*W. L. Aycock, M. D., research, Burlington.

*Bertha E. Weisbrod, R. N , Burlington.

Division of maternal and infant hygiene:

*Nellie N. Jones, R. N., maternity, infancy, and child hygiene nurse.

Appropriations for fiscal year ending June 30, 1927:

Total budget, $36,000.

Other sources of revenue.

Private donations for study and treatment of infantile paralysis.

Sheppard-Towner funds from Federal Government.

Publications issued by health department.

Biennial report.

Laboratory is not connected with an educational institution.

VIRGINIA

Board of health:

W. T. Graham, M. D., acting president, Richmond.

Mrs. W. M. Smith, Berryville.

Frank Darling, Hampton.

J. A. McGuire, M. D., Norton.

Guy R. Harrison, D. D. S., Richmond.

George B. Lawson, M. D., Roanoke.

L. T. Royster, M. D., Charlottesville.

Executive health officer:

*Ennion G. Williams, M. D., State health commissioner, Richmond.

Assistant health commissioner and director of rural health work:

*Roy K. Flannagan, M. D., Richmond.

Registrar of vital statistics:

*W. A. Plecker, M. D., Richmond.

Bacteriologist:

*A. H. Straus, Richmond.

Sanitary engineer:

Richard Messer, C. E., Richmond.

Director cooperative sanitation:

*H. G. Grant, M. D., Richmond.

Bureau of child welfare:

*Mary E. Brydon, M. D., Richmond.

Director public health nursing:

*Nannie J. Minor, R. N., Richmond.

Director mouth hygiene:

*N. Talley Ballou, D. D. S., Richmond.

Director tuberculosis education:

*Agnes D. Randolph, R. N., Richmond.

Epidemiologist:

*D. H. Anderson, M. D.

Director social hygiene education:

*Mrs. F. B. Croxton, R. N., Richmond.

Appropriations for fiscal year ending June 30, 1927:

Administration	$22,640
Sanitary engineering	17,070
Publicity	5,600
Rural health work	40,000
Malaria	5,000
Inspection of convict camps	3,000
Laboratory	19,900
Child welfare and public health nursing	50,000
Bureau of social hygiene	7,000
Control of epidemics	5,000
Vital statistics	22,495
Collection and publication of marriage and divorce statistics	3,076
Prevention of blindness	2,300
Tuberculosis education	23,350
Total	226,431

Publications issued by health department:

Monthly bulletin.

Annual report.

WASHINGTON

Board of health:

A. E. Stuht, M. D., director of health, chairman.

Clarence A. Smith, M. D., Seattle, Wash.

James H. Egan, M. D.

Samuel L. Caldbick, M. D., Everett.

John O'Shea, M. D., Spokane.

H. W. Nightingale, secretary, Seattle.

Executive health officer:

*A. E. Stuht, M. D., State director of health, Seattle.

Epidemiologist:

*A. U. Simpson, M. D., Seattle.

Chief of laboratory:

*A. U. Simpson, M. D., Seattle.

Sanitary engineer:

*H. W. Nightingale, C. E., Seattle.

Registrar:
*H. W. Nightingale, C. E., Seattle.

Division of child hygiene:
*A. E. Stuht, M. D., chief.

Division of public health nursing:
*Mary Louise Allen, chief.

Appropriation for two years ending Mar. 31, 1929:

Operations	$89,000
Division of child hygiene—Federal	5,000
Tuberculosis hospitals (State aid to local sanatoria)	100,000

WEST VIRGINIA

Public health council:
H. G. Camper, M. D., president, Welch.
W. M. Babb, M. D., Keyser.
J. L. Pyle, M. D., Chester.
W. S. Fulton, M. D., Wheeling.
H. A. Barbee, M. D., Pt. Pleasant.
B. O. Robinson, M. D., Parkersburg.
W. T. Henshaw, M. D., commissioner of health, Charleston.

Executive health officer:
*W. T. Henshaw, M. D., commissioner of health, Charleston.

Division of sanitary engineering:
*Ellis S. Tisdale, chief engineer, Charleston
*John B. Harrington, assistant engineer, Charleston.
*Daniel W. Evans, assistant engineer, Charleston.

Division of vital statistics:
*Carl F. Raver, M. D., M. P. H., director, Charleston.
*Donald G. Kyle, field agent, Charleston.

Division of child welfare and public health nursing:
*Jean T. Dillon, R. N., director, Charleston.
*Edna M. Hardsaw, R. N., field advisory nurse, Charleston.
*Miss Wayne Welton, field advisory nurse, Charleston.

Hygienic laboratory:
*Chas. E. Gabel, Ph. D., director, Charleston.
*Harriet K. Storm, chemist, Charleston.
*Thomas Moore, technician, Charleston.

Division of preventable diseases:
*W. T. Henshaw, acting director.

Bureau of venereal diseases:
*David Littlejohn, acting director, Charleston.
*Ada L. Coddington, associate director, Charleston.

Bureau of rural sanitation:
*David Littlejohn, A. A. Surgeon, U.S.P.H.S., director, Charleston.

Division of public health education:
*Dorothea Campbell, director, Charleston.

Appropriations for fiscal year ending June 30, 1927:

For general use	$110,000
Salary of commissioner	4,800
State Sheppard-Towner	5,000
Total	119,800

Other sources of revenue:
Fees for granting certificates to practice medicine.
Fees from laboratory work for private individuals.

Expense of cooperative work with the Federal Government: Sheppard-Towner act relating to maternal and infant hygiene, $10,000.

Publications issued by health department:
Quarterly bulletin.
Annual report.

WISCONSIN

Board of health:
Otho Fiedler, M. D., president, Sheboygan.
Joseph Dean, M. D., vice president, Madison.
L. A. Steffen, M. D., Antigo.
J. J. Seelman, M. D., Milwaukee.
G. Windesheim, M. D., Kenosha.
Mina B. Glasier, M. D., Bloomington.
C. A. Harper, M. D., health officer, Madison.

Executive health officer:
*C. A. Harper, M. D., State health officer, Madison.

Deputy State health officers:
*G. W. Henika, M. D., Madison.
*George E. Hoyt, M. D., Milwaukee.
*I. D. Wiltrout, M. D., Chippewa Falls.
*V. A. Gudex, M. D., Oshkosh.
*M. S. Corlett, M. D., Rhinelander.

Bureau of vital statistics:
*C. A. Harper, M. D., State registrar, Madison.

Bureau of communicable diseases:
*F. F. Bowman, M. D., epidemiologist, Madison.
*H. M. Guilford, M. D., director, Madison.

Bureau of sanitary engineering:
*C. M. Baker, State sanitary engineer, Madison.
*L. F. Warrick, assistant sanitary engineer, stream pollution, Madison.
*O. J. Muegge, assistant sanitary engineer, Madison.
*E. J. Tully, chemical engineer, Madison.

Bureau of education:
*L. W. Bridgman, acting director, Madison.

Bureau of child welfare:
*Cora S. Allen, M. D., director, Madison.
*Sylvia G. Stuessy, M. D., child health physician, Madison.
*Charlotte Calvert, M. D., child health physician, Madison.
*Mrs. Gertrude S. Hasbrouck, organizer of infant hygiene classes, Madison.

Bureau of public health nursing:
*Cornelia Van Kooy, R. N., director, Madison.
*Edith L. Olson, R. N., field advisory nurse, Madison.

Bureau of nursing education:
*Adda Eldredge, R. N., director, Madison.

Bureau of plumbing and domestic sanitary engineering:
*Frank R. King, State domestic sanitary engineer, Madison.

Bureau of social hygiene:
*H. M. Guilford, M. D., director, Madison.
*Aimeé Zillmer, lecturer, Madison.

Laboratory service:

*W. D. Stovall, M. D., director, State laboratories, Madison.

*M. S. Nichols, chemist, State laboratory, Madison.

*Anna Brandsmark, director branch laboratory, Rhinelander.

*Elizabeth Brown, director, cooperative laboratory, Beloit.

*Marjorie Bates, director, cooperative laboratory, Oshkosh.

*Henry Miller, director, cooperative laboratory, Kenosha.

*Josephine Foote, director, cooperative laboratory, Wausau.

*Mrs. Bessie Keeney, director, cooperative laboratory, Superior.

*Clarissa McFetridge, director, cooperative laboratory, Green Bay.

Appropriations for fiscal year ending June 30, 1927:

General administration	$54,000
Emergency appropriation for epidemics	7,500
Branch laboratory and State cooperative laboratories	9,000
Prevention of infantile blindness	1,500
Venereal disease control work	36,370
Bureau of sanitary engineering	14,000
Bureau of communicable diseases	13,300
Stream pollution work	15,000
Bureau of child welfare and public health nursing	23,000

Appropriations for fiscal year ending June 30, 1927—Continued.

Comfort station supervision	$5,000
Licensing of embalmers, hotels and restaurants, plumbers, beauty parlors, nurses, and barbers	57,650
Total	236,320

Publications issued by health department:

Quarterly bulletin.

Biennial report.

WYOMING

Board of health:

Albert B. Tonkin, M. D., president, Riverton.

G. L. Strader, M. D., vice president, Cheyenne.

W. H. Hassed, M. D., secretary and executive officer, Cheyenne.

T. E. Marshall, M. D., Sheridan.

G. M. Anderson, M. D., Laramie.

Executive health officer:

*W. H. Hassed, M. D., State health officer, Cheyenne.

Appropriations for biennial period ending Mar. 31, 1929:

State board of health	$10,600
Salary of secretary	8,000
Salary board members	400
Bureau of maternity and child hygiene	5,000
Total	24,000

Wyoming board of health does not maintain a laboratory.

CASES OF POLIOMYELITIS REPORTED BY STATES FOR LAST THREE WEEKS OF OCTOBER, 1925, 1926, AND 1927

The following table is a continuation of the table appearing in the Public Health Reports, October 7, 1927, page 2452, and also gives a comparison of the telegraphic reports for the last three weeks of October of the years 1925, 1926, and 1927:

Cases of poliomyelitis reported by State health officers October 9–29, 1927, compared with reports for the corresponding weeks of 1925 and 1926

State	Week ended—								
	Oct. 15, 1927	Oct. 16, 1926	Oct. 17, 1925	Oct. 22, 1927	Oct. 23, 1926	Oct. 24, 1925	Oct. 29, 1927	Oct. 30, 1926	Oct. 31, 1925
Alabama	0	3	1	2	1	2	1	0	0
Arizona	6	0	1	4	0	0	1	0	0
Arkansas	13	2	1	2	2	0	2	0	1
California	26	3	10	32	6	9	30	1	4
Colorado	11	1	2	7	0	0	--------	0	1
Connecticut	8	2	0	9	1	1	9	4	0
Delaware	0	0	0	0	0	0	0	0	0
District of Columbia	2	0	1	3	0	0	--------	1	0
Florida	0	0	4	0	0	1	3	0	0
Georgia	0	0	1	1	0	2	0	0	2
Idaho	0	0	--------	0	0	0	2	0	--------
Illinois	26	6	16	37	5	15	25	4	7
Indiana	18	3	7	11	2	2	19	2	3
Iowa	5	0	13	--------	0	9	8	0	--------
Kansas	26	5	5	8	0	5	14	3	5

Cases of poliomyelitis reported by State health officers October 9–29, 1927, compared with reports for the corresponding weeks of 1925 and 1926—Continued

State	Week ended—								
	Oct. 15, 1927	Oct. 16, 1926	Oct. 17, 1925	Oct. 22, 1927	Oct. 23, 1926	Oct. 24, 1925	Oct. 29, 1927	Oct. 30, 1926	Oct. 31, 1925
Louisiana	1	0	0	2	0	0	2	0	1
Maine	12	0	0	13	1	0	6	1	0
Maryland	2	1	2	2	2	19	3	1	4
Massachusetts	78	3	5	99	9	10	66	6	4
Michigan	21	0	0	18	0	0	18	0	0
Minnesota	5	2	23	8	0	17	6	2	18
Mississippi	0	0	0	2	2	0	0	1	0
Missouri	20	1	5	9	1	2	12	0	4
Montana	2	0	2	2	0	3	0	0	0
Nebraska	13	0	11	5	0	16	14	1	7
New Jersey	9	1	3	11	3	3	8	1	2
New Mexico	15	0	0	7	0	0	3	0	1
New York	38	20	32	32	23	28	31	14	6
North Carolina	0	5	1	1	2	1	1	2	0
North Dakota	1	0	3		0	3		0	1
Ohio	77			46			51		
Oklahoma	13	2	1	10	1	1	7	0	0
Oregon	19	1	0	31	1	0	26	1	0
Pennsylvania	33	12		45	9		18	3	
Rhode Island	2			3	2		4		0
South Carolina	3	7		3	3	3	2	10	4
South Dakota	2	0	7	5	0	2	6	0	2
Tennessee	3	0		7	0		2	0	
Texas	10	0	0	9	0	1	3	0	0
Utah	2	0		0	0	1	2	1	0
Vermont	1	0	5	7	0	5	6	0	2
Virginia	2	0	1	0	0	1	2	0	0
Washington	33	1	3	22	0	7	21	0	9
West Virginia	14	0	0	17	0	0	9	2	0
Wisconsin	12	3	14	8	5	7	9	4	14
Wyoming	3	1	1	1	0	0	1	0	0

PUBLIC HEALTH ENGINEERING ABSTRACTS

New Type of Sewage Treatment Plant at Winterset, Iowa. T. R. Hamilton. *Western Construction News*, vol. 2, No. 11, June 10, 1927, pp. 46-48. (Abstract by E. A. Reinke.)

Plant consists of a Dorr clarifier and separate sludge digestion followed by trickling filters. The advantages claimed for the sedimentation with separate sludge digestion in place of the conventional Imhoff tank are (1) less attendance (daily inspections sufficient); (2) disagreeable work is all done by machinery.

The plant is designed for 4,000 population at an estimated flow of 60 gallons per capita per day, or 240,000 gallons daily. The cost was approximately $38,300.

The New Sewage Treatment Plant of Trenton, N. J. P. N. Daniels. *Water Works*, vol. 66, No. 9, September, 1927, pp. 383–387. (Abstract by W. R. Schroiner.)

General description of $1,243,000 plant serving combined system of sewers, and of design capacity for 150,000 population, or for 25 m. g. d. dry weather and 37.5 m. g. d. storm flow, consisting of overflow chamber, gate house, screen racks, double grit chamber, pumping station, 12 Imhoff tanks, 24 sludge-drying beds, and accessories.

Screen racks are 15 feet long and 8 feet wide, with 1-inch slots, inclined 23° from horizontal. Grit chambers are two in number, 60 feet long, 8½ feet top,

5 feet bottom width, maximum depth 5 feet; velocity regulated close to 1 foot per second by variation in pumping rate. Settled material removed by clamshell electric locomotive crane and industrial railway dump cars with gasoline locomotive.

Imhoff tanks arranged to allow variable number in use, with flow reversible. Each tank, 114 feet long, has 28,160 cubic feet settling capacity; detention period is 3.39 hours at present average rate of flow of 18 m. g. d., 2.44 hours at 25 m. g. d., and 1.63 hours at 37.5 m. g. d. Gas vent area 19.8 per cent, sludge capacity 21,590 cubic feet, scum capacity 14,730 cubic feet. Sludge beds each 20 feet wide and 182 feet long, giving in all 0.58 square foot per capita; minimum depth 10 inches. Provision is made for removing scum from gas vents to sludge beds.

The pumping station is circular in shape, with reinforced concrete substructure and brick superstructure, housing suction well of 126,000-gallon capacity, and 6 motor-driven double-suction vertical pumps, 3 of which are constant-speed type, each 490 r. p. m., 8 m. g. d., 3 variable-speed type, each minimum 3 m. g. d., maximum 11 m. g. d. capacity, pumping against a 23-foot head, all motors operating on 2,200-volt, 3-phase, 60-cycle current. Pumps are designed for rapid hand cleaning, flushing by streams of water and by reversed flow of sewage, and other means of preventing clogging. Valves are hydraulically operated. A novel semiautomatic regulation of the rate of pumping makes possible the maintenance of sewage level in grit chamber within a maximum range of 4.7 feet.

Sewage Plant Records. John R. Downes. *Water Works*, vol. 66, No. 8, August, 1927, pp. 335–336. (Abstract by W. R. Schreiner.)

A discussion of the purpose of the plant records and explanations of kinds of data worthy of recording. Purpose fourfold, to show (1) plant efficiency, (2) plant effectiveness, (3) line of defense against unjust criticism, and (4) adequate information for plant improvement. Data needed include the number and kind of connections, continuous meter records of flow at outfalls, oxygen demand by methylene blue test, suspended solids, pH determinations at various points of treatments. Determination of ammonias yields little information of value. Illustration given of value of records in showing need of plant enlargement where metering had cut down per capita water consumption 20 per cent and population had increased 40 per cent. A method given in detail for converting from plant data giving "suspended solids retained" to amount of sludge to be moved.

Limestone for Sewage Filter Beds. (Abstract of Illinois State Geological Survey Report of Investigations No. 12, Urbana, Ill.) *Water Works*, vol. 66, No. 8, August, 1927, p. 341. (Abstract by W. R. Schreiner.)

In filter beds of sewage treatment plants limestone gravel is an important item of construction. For one town of 25,000 about 650 carloads of gravel were used. Favorable points to be considered are low porosity, with pores evenly distributed, stone firm, rough, chemically free from clay or materials which hydrate or oxidize, mechanically free from dirt or fine rock particles. Methods and tests are described in complete report referred to in title.

How Chicago Protects Its Water Supply. Arthur E. Gorman. *Water Works Engineering*, vol. 80, No. 16, August 3, 1927, pp. 1129–1130 and 1148–1152. (Abstract by W. L. Havens.)

This article is briefed from a paper presented before the 1927 Convention of the American Water Works Association. It describes the procedure and control in chlorinating Chicago water, this being the only safeguard against contamination. The average dose is 3.56 pounds per m. g. Meterological data of wind, rainfall and river flow are obtained and used to forecast needs for increased dosage. All piping and equipment are in duplicate, as are the chlorinating booths in which equipment is housed to guard against interruption of service from leaks. One week's supply is maintained at the station and one month's supply in warehouse

or in process of delivery. A system of tagging governs the check in and check out of cylinders. Cylinders are cut out of service after 99 of the 100 pounds of gas have been used. Chlorine is applied to the suction well at its junction with the intake tunnel. With several pumps drawing from one well it is found that short circuiting of disinfectant is avoided if the chlorine is applied at least 30 feet from the pump suction. Control is based upon hourly tests for residual chlorine, the effort being to maintain 1 pound per m. g. in the water as it leaves the pumping station. During emergency periods, tests are run every 15 minutes or oftener. Routine tests are also made by visits to a schedule of sampling points. Check bacteriological examinations are made daily. Any change in residual as noted at any station is broadcast for the warning of other stations. During 1926 there were 47 periods of high chlorine absorption, the longest being 24 consecutive hours. Dosage has varied to a maximum of 7 pounds per m. g. Chlorine is also used to sterilize tunnel shafts and new mains. In the former the gas is applied from a hose which is raised at the rate of 2 feet per minute. In mains the section is valved off, and a noticeably heavily chlorinated water is applied through a corporation cock and flushed out of a hydrant for an hour after which the flowing water must show sterile or the process is repeated. The organization which administers this work is in the bureau of engineering. It was trained from a green personnel. A formal manual established procedure. The plan as above has been effective since 1923.

A Program for Protecting Chicago's Land Tunnel System. H. H. Gerstein and Arthur E. Gorman. *Journal of American Water Works Association*, vol. 18, No. 1, July, 1927, pp. 32-43. (Abstract by D. E. Kepner.)

Prompted by marked differences between the bacterial quality of water samples collected from intakes at the lake cribs and of those from intermediate points in the tunnels between the intakes and the pumping stations, extensive investigations have been made in Chicago to locate sources of entrance of the contamination. In many instances sewage was found to be leaking from broken sewers or house drains or from faulty connections, and entering the water tunnel through cracks in the tunnel shafts. Pile driving in the vicinity of tunnel manholes was found particularly hazardous, as it injured both sewers and tunnel shafts. Protection of the tunnels against the entrance of contamination is accomplished by replacing all sewers and house drains within 50 feet of tunnel shafts with cast-iron pipe.

Manganese in Waterworks. C. A. H. von Wolzogen Kuhr. *Journal American Water Works Association*, vol. 18, No. 1, July, 1927, pp. 1–31. (Abstract by D. E. Kepner.)

An investigation of the part which manganese plays in waterworks was carried out with regard to the Amsterdam dune water. Originally the manganese is dissolved in the dune water in the form of manganous sulphate and manganous bicarbonate, both of which, with hydrolysis, produce manganous hydroxide. From the dunes the water is led through canals to a reservoir, then filtered through rapid gravel filters, followed by slow sand filters. As the water passes through the gravel filters manganic dioxide is formed and adheres to the gravel particles. In case the gravel filters are by-passed, the manganic dioxide is formed and removed in the slow sand filters. (Two methods are described for determining the particular degree of oxidation of the manganese retained in the filters.)

Experiments showed that oxidation of the original manganese compounds in the dune water by chemical processes did not take place except at a pH of 10 or more; and since the normal pH of the dune water is 8.1 this was not considered the method of oxidation taking place in the filters. The finding in the water of manganese microbes which, upon cultivation, showed the capacity to oxidize

manganous salts into manganic dioxide, led to the conclusion that the action in the filters was essentially due to biochemical action.

Discussions of the paper by Messrs. Robert S. Weston, John R. Baylis, and F. E. Hale recount other investigations of manganese in water, and each state the belief that although the oxidation of manganous compounds into manganic dioxide is brought about by bacteria, it is also accomplished by chemical processes at pH values considerably under 10.

Water Supply for the Rural Home. W. A. Hardenbergh. *Plumbers and Heating Contractors Trade Journal*, vol. 83, No. 4, August 15, 1927, pp. 344–347. (Abstract by H. V. Pedersen.)

In this article the author has described a number of practical methods of developing a water supply for rural homes. Water supplies are classified as coming from wells, springs, cisterns, and surface waters. The sanitary construction of dug and bored wells is described and illustrated. It is recommended that wells be thoroughly pumped out frequently and that all mud, silt, moss, and débris be removed. Well-water supplies are more preferable than cisterns in that rain water is likely to have objectionable taste and odor. If plumbing is installed in the home, a cistern supply is seldom adequate.

Both the gravity and pressure systems are practical for rural use, but the author prefers the pressure system because the pressure tank can be much smaller in capacity than the gravity tank, and chances of tastes, odors, and freezing can be eliminated by placing the tank in the cellar.

Practically any kind of pump can be used in connection with rural water systems, but electrically-driven pumps are most satisfactory where electric power is available.

The remainder of the article is concerned with the flow of water in pipes, written in an elementary way, but instructive from a plumber's viewpoint.

Water Supplies and Public Health. A. S. M. MacGregor, *Surveyor*, vol. 72, No. 1853, July 29, 1927, p. 105. (Abstract by D. E. Kepner.)

This is a nontechnical article mentioning the improvement in public health due to better water supplies. The part that sterilization with chlorine has played is stressed, and mention is made of the efficiency of chloramine sterilization.

Boating prohibited on Water Supply Pond. Anon. *Water Works*, vol. 66, No. 1, January, 1927, p. 8.

The State Supreme Court of Vermont in a decision handed down last May upheld an order of the State board of health prohibiting boating on a certain pond which was a source of water supply of the city of Montpelier, Vt. The defendant was convicted of violating the order. This order, which was adopted by the board under statutory authority to make regulations to prevent the pollution of waters used for public water supply, was upheld by the supreme court.

Über die Desinfektionswirkung von Chloramin (V. Heyden). **(Disinfecting Action of Chloramin.)** Adolf Koser. (*Centralbl. Bakt.* (etc.) Abt. 1, Orig. 99 (1/3): 164–171, 1926.) Abstract by B. Cohen in *Biological Abstracts*, vol. 1, No. 4, June, 1927, pp. 508–509.

The sodium salt of p-toluolsulphonchloramin sold under the trade name of "chloramin" (von Heyden) was found to contain about 25 per cent of chlorine that could be liberated by the addition of HCl. Aqueous solutions of chloramin of 0.25–10.0 per cent preserved in dark bottles maintain their chlorine content for at least 15 days. A dilution of 1: 500 prevents the multiplication of *Bact. coli* and *Staph. pyogenes aureus* in favorable culture media. In thick bacterial suspensions, 0.5 per cent chloramin destroys *Bact. coli* within 1 minute and *staphylococci* in 30 minutes. A 2 per cent solution is necessary to kill *staphylococci* in

5 minutes. Under comparable conditions a 2.5 per cent cresol solution kills *Bact. coli* in 1 minute, *staphylococci* in 6 minutes. Anthrax spores are killed in 3 hours by 5 per cent and in 2 hours by 10 per cent chloramin solutions. It is concluded that chloramin may very well serve as a substitute for calcium hypochlorite.

Mixing Basin at Atlanta Water Works. H. F. Wiedeman. *Engineering News Record*, vol. 98, No. 21, May 26, 1927, pp. 874–875. (Abstract by A. S. Bedell.)

Gradual increase in filter plant capacity resulted in increased difficulty in securing adequate mix with solution feed alum dosing and involved undesirable loss of head. The new mixing basin, with ultimate capacity of 60 m. g. d., is of the "around the end" type with 12 turns and total travel of 1,664 feet, and is divided into three sections with sluice gates to outlet flume for flexibility. At present, with 30 m. g. d. consumption, retention period is 40 minutes, and, on the average, the velocity is 0.5 foot per second. Dry-feed machines are operated by water motors. Floc forms before water has flowed one-fourth the distance and it is fully formed on leaving the basin, settling out quickly in coagulation basins. Thorough mixing has resulted in 25 per cent saving in chemicals used.

Permissible Pollution in Streams Used for Public Water Supply. J. K. Hoskins. *Journal North Carolina Section American Water Works Association*, vol. 4, No. 1, 1926, pp. 55–64. (Abstract by J. K. Hoskins.)

The density of bacterial content is the most sensitive measure of sewage pollution and therefore the best criterion of the degree of permissible pollution of streams used as sources of public water supply. The relationships between contributing sewered population, rates of natural purification in the flowing stream, and efficiencies of artificial purification processes, if definitely established, afford a means for determining the permissible pollution of streams that may be used to produce safe drinking water supplies. A discussion of the paper included an explanation of the sewage disposal problem in North Carolina and the advisability of permitting fishing, under suitable regulations, on storage reservoirs.

Water Purification. Paul Hansen. *Journal of American Water Works Association*, vol. 18, No. 1, July, 1927, pp. 83–95. (Abstract by J. B. Harrington.)

This article is a discussion of the progress and present limitations in the purification of water. It describes briefly the following, under separate headings: Standards of a filtration plant performance from 1900 to 1925, when the Treasury Standard was revised. In 1900 a bacteria reduction of 97 per cent was considered satisfactory. The percentage of reduction gradually increased to the present Treasury Standard of 1 *B. coli* per 100 c. c.

The limit of raw-water pollution is described in a brief summation of the research and experimental work done in 1922 by H. W. Streeter in his study of 25 water-purification plants and in 1923 by Streeter in his study of 10 filter plants along the Ohio River. These studies show that the plants with double coagulation and double sedimentation can satisfactorily purify waters containing 10,000 colon bacilli per 100 c. c., plants with single coagulation and sedimentation water containing 1,000 colon bacilli per 100 c. c., and plants with filtration alone water containing 100 colon bacilli per 100 c. c.

Further aids to control are given as hydrogen ion determination and the microscopic examination of sand grains in the filter bed. Improved methods of applying chemicals are also described briefly.

The design of the mixing chambers is stated as having been given considerable attention, with the result that various methods, such as the use of baffles, stirring devices, and hydraulic jumps, are now employed.

The design of a sedimentation basin is usually determined by the economy of shape and the ease of construction, with a minimum retention period of two hours. Other factors that should be given consideration are the time required for precipitation of chemicals under adverse conditions, the treatment of raw water by split or super chlorination, and the method of cleaning basins used for waters with high turbidities.

The design of filter units is essentially the same, with the exception of numerous changes in the underdrain system. Filter units of one-half million, one million, two million, and four million gallon capacity are most common. In the design of the clear well it is necessary to obtain an economical balance between filter capacity and clear-water storage. Aeration is described as being effective in removing carbon dioxide, hydrogen sulphide, iron, and tastes and odors. Disinfection by liquid chlorine and the advantages of super and split chlorination are discussed in connection with the reduction of phenol tastes and in combating micro-organisms.

The cause of deterioration of concrete is described as being due to the porosity of the walls exposed to water on one side and frost on the other. The disintegration usually takes place above the water line. As a remedy the densest possible concrete should be used; also waterproofing compounds should be applied at and above the water line.

In closing, the question of sewage treatment to prevent too great a burden on water-purification plants is discussed; also, the elaboration of water-purification works, since municipalities usually fail to see the advantages of treating their sewage to protect water supplies below, unless forced by legal action.

Review of Water Works Practice. Anon. *Canadian Engineer*, vol. 52, No. 23, June 7, 1927, p. 570. (Abstract by R. E. Thompson.)

Brief outline of modern waterworks practice with regard to wells, pipe, services, water mains on both sides of street, treatment of water with iodine, and double chlorination. The article is based on a report presented at the annual meeting of the Kansas Engineering Society.

DEATHS DURING WEEK ENDED OCTOBER 29, 1927

Summary of information received by telegraph from industrial insurance companies for week ended October 29, 1927, and corresponding week of 1926. (From the Weekly Health Index, November 2, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Oct. 29, 1927	Corresponding week 1926
Policies in force	69, 179, 971	65, 729, 006
Number of death claims	11, 869	11, 573
Death claims per 1,000 policies in force, annual rate	8, 9	9, 2

Deaths from all causes in certain large cities of the United States during the week ended October 29, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, November 2, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Oct. 29, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Oct. 29, 1927 [2]
	Total deaths	Death rate [1]		Week ended Oct. 29, 1927	Corresponding week 1926	
Total (68 cities)	6,861	12.1	[3] 12.2	720	[3] 796	[4] 57
Akron	35			6	3	65
Albany [5]	22	9.6	18.0	1	6	21
Atlanta	71			2	9	
White	35			1	3	
Colored	36	(6)		1	6	
Baltimore [5]	224	14.8	12.3	40	13	124
White	158		10.8	29	10	112
Colored	66	(6)	21.0	11	3	171
Birmingham	52	12.6	17.3	4	15	
White	26		13.9	2	4	
Colored	26	(6)	22.7	2	11	
Boston	109	13.1	14.7	27	43	75
Bridgeport	21			1	6	19
Buffalo	141	13.4	14.2	15	7	63
Cambridge	22	9.3	10.7	2	2	30
Camden	33	12.0	8.4	2	3	34
Canton	25	11.5	10.4	2	3	47
Chicago [5]	702	11.8	10.9	68	57	59
Cincinnati	124	15.7	15.1	9	14	56
Cleveland	169	9.0	11.0	15	26	40
Columbus	74	13.3	14.6	4	9	37
Dallas	52	13.0	12.1	6	6	
White	42		11.0	6	6	
Colored	10	(6)	19.3	0	0	
Dayton	29	8.4	12.7	3	10	49
Denver	74	13.3	14.1	11	9	
Des Moines	33	11.5	9.3	2	5	33
Detroit	292	11.4	10.9	33	42	52
Duluth	28	12.7	8.3	6	2	129
El Paso	20	9.1	12.9	6	9	
Erie	19			3	3	50
Fall River [5]	28	11.0	12.7	5	7	88
Flint	35	12.8	10.0	11	4	180
Fort Worth	27	8.6	5.2	3	3	
White	24		5.2	3	3	
Colored	3	(6)	5.5	0	0	
Grand Rapids	22	7.2	11.7	4	7	59
Houston	55			11	6	
White	36			8	3	
Colored	19	(6)		3	3	
Indianapolis	87	12.1	11.6	8	10	63
White	74		13.7	8	7	72
Colored	13	(6)	21.3	0	3	0
Jersey City	71	11.5	11.6	7	10	52
Kansas City, Kans	33	14.7	9.8	1	7	19
White	26		10.3	1	7	22
Colored	7	(6)	7.6	0	0	0
Kansas City, Mo	104	14.2	13.8	10	9	
Knoxville	26	13.3		2		
White	21			2		
Colored	5	(6)		0		
Los Angeles	223			6	32	17
Louisville	83	13.5	12.6	5	9	43
White	68		11.7	5	9	49
Colored	15	(6)	17.6	0	0	0
Lowell	23	10.9	14.2	2	4	39
Lynn	19	9.4	7.0	0	2	0
Memphis	60	17.5	18.6	5	11	
White	31		11.9	4	1	
Colored	29	(6)	30.6	1	10	
Milwaukee	103	10.1	8.8	13	11	61
Minneapolis	111	13.1	9.9	11	4	62
Nashville	59	22.3	18.6	8	7	
White	32		17.0	2	6	
Colored	27	(6)	22.7	6	1	
New Bedford	20	8.7	8.7	3	4	52
New Haven	43	12.1	11.7	6	5	84

Footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended October 29, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, November 2, 1927, issued by the Bureau of the Census, Department of Commerce)—Continued.

City	Week ended Oct. 29, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Oct. 29, 1927
	Total deaths	Death rate		Week ended Oct. 29, 1927	Corresponding week 1926	
New Orleans	142	17.5	17.8	19	16	----------
White	91	----------	14.1	14	10	----------
Colored	51	(6)	28.2	5	6	----------
New York	1,304	11.4	11.4	112	157	46
Bronx borough	160	9.0	9.7	15	14	48
Brooklyn borough	435	10.0	10.3	44	61	46
Manhattan borough	538	15.5	14.9	40	64	47
Queens borough	129	8.3	6.7	12	12	51
Richmond borough	42	14.9	17.5	1	0	19
Newark, N. J.	89	10.0	9.4	9	14	45
Oakland	49	9.6	11.8	6	3	70
Oklahoma City	27	----------	----------	4	4	----------
Omaha	42	10.0	12.8	2	4	22
Paterson	32	11.6	9.1	1	0	18
Philadelphia	435	11.1	12.9	48	62	64
Pittsburgh	191	15.5	12.8	25	19	87
Portland, Oreg.	58	----------	----------	6	4	63
Providence	77	14.3	12.9	11	9	93
Richmond	55	14.9	11.9	2	12	26
White	33	----------	7.4	1	7	20
Colored	22	(6)	22.8	1	5	38
Rochester	69	11.1	11.0	11	5	93
St. Louis	255	15.8	13.8	25	22	----------
St. Paul	55	11.5	12.2	6	4	55
Salt Lake City [5]	30	11.5	15.7	1	5	15
San Antonio	66	16.3	11.4	14	9	----------
San Diego	39	17.7	22.8	4	2	85
San Francisco	156	14.1	14.7	5	9	31
Schenectady	20	11.2	11.8	3	0	90
Seattle	63	----------	----------	6	5	63
Somerville	13	6.6	13.0	0	1	0
Spokane	20	9.6	12.4	2	0	50
Springfield, Mass.	32	11.4	13.7	0	4	0
Syracuse	39	10.3	13.8	7	6	90
Tacoma	21	10.2	11.3	1	1	24
Toledo	56	9.6	12.9	3	11	29
Trenton	30	11.4	11.7	7	3	122
Utica	34	17.2	19.2	8	1	182
Washington, D. C.	128	12.4	13.3	15	10	87
White	77	----------	10.2	6	5	51
Colored	51	(6)	22.6	9	5	165
Waterbury	15	----------	----------	2	1	47
Wilmington, Del.	25	10.3	12.6	2	2	50
Worcester	36	9.6	11.6	3	6	36
Yonkers	22	9.6	12.6	1	1	23
Youngstown	30	9.3	8.2	7	3	98

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 67 cities.
[4] Data for 63 cities.
[5] Deaths for week ended Friday Oct. 28, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta 31, Baltimore 15, Birmingham 39, Dallas 15, Fort Worth 14, Houston 25, Indianapolis 11, Kansas City (Kans.) 14, Knoxville 15, Louisville 17, Memphis 38, Nashville 30, New Orleans 26, Richmond 32, and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended November 5, 1927

DIPHTHERIA	Cases
Alabama	114
Arizona	9
Arkansas	42
California	123
Colorado	36
Connecticut	21
Delaware	3
Florida	36
Georgia	53
Illinois	182
Indiana	69
Iowa [1]	26
Kansas	46
Louisiana	71
Maine	2
Maryland [1]	33
Massachusetts	101
Michigan	133
Minnesota	88
Mississippi	84
Missouri	113
Montana	8
Nebraska	19
New Jersey	159
New Mexico	12
New York	337
North Carolina	225
Oklahoma [2]	120
Oregon	32
Pennsylvania	307
Rhode Island	16
South Carolina	89
South Dakota	8
Tennessee	57

DIPHTHERIA—continued	Cases
Texas	68
Utah [1]	13
Washington	80
West Virginia	19
Wisconsin	38
Wyoming	6

INFLUENZA	Cases
Alabama	38
Arkansas	42
California	18
Florida	4
Georgia	57
Illinois	29
Indiana	6
Maryland [1]	20
Massachusetts	13
Michigan	3
Minnesota	2
Missouri	12
New Jersey	11
New York	9
Oklahoma [2]	41
Oregon	11
Rhode Island	4
South Carolina	430
South Dakota	2
Tennessee	38
Texas	62
Utah [1]	3
Washington	1
West Virginia	3
Wisconsin	20
Wyoming	8

[1] Week ended Friday.

[2] Exclusive of Oklahoma City and Tulsa.

MEASLES

	Cases
Alabama	8
Arizona	1
Arkansas	8
California	49
Colorado	8
Connecticut	9
Delaware	12
Georgia	8
Idaho	1
Illinois	32
Indiana	11
Iowa [1]	2
Kansas	37
Louisiana	11
Maine	147
Maryland [1]	28
Massachusetts	167
Michigan	33
Minnesota	5
Montana	2
Nebraska	8
New Jersey	25
New Mexico	28
New York	140
North Carolina	499
Oklahoma [2]	10
Oregon	21
Pennsylvania	379
South Carolina	187
South Dakota	7
Tennessee	42
Texas	4
Utah [1]	1
Washington	88
West Virginia	17
Wisconsin	37
Wyoming	17

MENINGOCOCCUS MENINGITIS

Alabama	1
California	6
Colorado	5
Florida	1
Idaho	4
Illinois	8
Iowa [1]	1
Massachusetts	2
Michigan	3
Mississippi	1
New Jersey	1
Oklahoma [2]	2
Oregon	1
Pennsylvania	3
Tennessee	1
Texas	1
Washington	2
Wisconsin	9

POLIOMYELITIS

	Cases
Arkansas	1
California	35
Colorado	7
Connecticut	7
Delaware	1
Florida	1
Idaho	8
Illinois	14
Indiana	11
Iowa [1]	3
Kansas	4
Maine	5
Maryland [1]	1
Massachusetts	56
Michigan	14
Minnesota	3
Mississippi	3
Missouri	7
Montana	1
Nebraska	10
New Jersey	9
New Mexico	2
New York	23
North Carolina	2
Oklahoma [2]	3
Oregon	20
Pennsylvania	18
Rhode Island	3
South Carolina	4
South Dakota	7
Tennessee	4
Texas	11
Utah [1]	2
Washington	26
West Virginia	12
Wisconsin	8

SCARLET FEVER

Alabama	43
Arizona	5
Arkansas	23
California	134
Colorado	93
Connecticut	45
Delaware	3
Florida	14
Georgia	33
Idaho	8
Illinois	203
Indiana	128
Iowa [1]	59
Kansas	102
Louisiana	17
Maine	34
Maryland [1]	89
Massachusetts	213
Michigan	187
Minnesota	128
Mississippi	30
Missouri	84
Montana	19
Nebraska	34
New Jersey	106
New Mexico	20
New York	256
North Carolina	173
Oklahoma [2]	44
Oregon	36

[1] Week ended Friday.

[2] Exclusive of Oklahoma City and Tulsa.

SCARLET FEVER—continued

	Cases
Pennsylvania	342
Rhode Island	15
South Carolina	32
South Dakota	37
Tennessee	45
Texas	79
Utah [1]	3
Washington	68
West Virginia	103
Wisconsin	121
Wyoming	17

SMALLPOX

Alabama	8
California	7
Colorado	4
Idaho	3
Illinois	13
Indiana	38
Iowa [1]	41
Kansas	27
Louisiana	5
Michigan	18
Minnesota	1
Mississippi	12
Missouri	82
Montana	30
Nebraska	11
New York	7
North Carolina	15
Oklahoma [2]	20
Oregon	18
South Carolina	16
South Dakota	3
Tennessee	5
Texas	5
Utah [1]	47
Washington	17
West Virginia	8
Wisconsin	28

TYPHOID FEVER

	Cases
Alabama	26
Arizona	2
Arkansas	20
California	9
Colorado	5
Connecticut	6
Delaware	2
Florida	3
Georgia	25
Illinois	38
Indiana	10
Iowa [1]	3
Kansas	3
Louisiana	18
Maine	3
Maryland [1]	22
Massachusetts	8
Michigan	13
Minnesota	6
Mississippi	8
Missouri	26
Montana	3
Nebraska	4
New Jersey	10
New Mexico	13
New York	55
North Carolina	24
Oklahoma [2]	54
Oregon	8
Pennsylvania	42
South Carolina	31
South Dakota	8
Tennessee	48
Texas	10
Utah [1]	3
Washington	5
West Virginia	50
Wisconsin	7
Wyoming	5

Reports for Week Ended October 29, 1927

DIPHTHERIA

	Cases
District of Columbia	25
Georgia	59

INFLUENZA

Georgia	51

MEASLES

District of Columbia	3
Georgia	6

POLIOMYELITIS

	Cases
District of Columbia	1

SCARLET FEVER

District of Columbia	16
Georgia	44

TYPHOID FEVER

Georgia	31

[1] Week ended Friday.

[2] Exclusive of Oklahoma City and Tulsa.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week.

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
September, 1927										
California	14	339	32	13	135	3	254	295	33	79
Idaho	0	6			4		1	19	23	10
Kansas	3	152	3	2	91	2	62	201	10	104
Oklahoma [1]	6	274	68	1,121	54	46	33	87	55	385
Virginia	3	194	719	195	71	28	10	220	1	195

[1] Exclusive of Oklahoma City and Tulsa.

September, 1927

	Cases
Chicken pox:	
California	218
Idaho	4
Kansas	53
Oklahoma	7
Virginia	77
Dysentery:	
California—	
Amoebic	5
Bacillary	3
Kansas (bacillary)	2
Oklahoma	41
Virginia	223
German measles:	
California	54
Kansas	1
Hookworm disease:	
California	2
Virginia	17
Impetigo contagiosa:	
Kansas	13
Jaundice (epidemic):	
California	3
Leprosy:	
California	1
Lethargic encephalitis:	
California	8
Idaho	1
Kansas	1
Mumps:	
California	200
Idaho	18

Mumps—Continued.	Cases
Kansas	22
Oklahoma	8
Ophthalmia neonatorum:	
California	3
Oklahoma	1
Paratyphoid fever:	
California	4
Rabies in animals:	
California	24
Idaho	1
Scabies:	
Kansas	1
Septic sore throat:	
Idaho	1
Oklahoma	9
Tetanus:	
California	6
Kansas	3
Oklahoma	1
Trachoma:	
California	8
Oklahoma	7
Vincent's angina:	
Kansas	4
Whooping cough:	
California	435
Idaho	14
Kansas	205
Oklahoma	80
Virginia	320

Number of Cases of Certain Communicable Diseases Reported for the Month of August, 1927, by State Health Officers

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Alabama	7	105	138	25	71	10	396	356	114
Arizona	-------	4	10	1	10	0	54	18	1
Arkansas	36	18	50	168	9	11	[1] 68	192	104
California	207	387	239	187	248	29	962	93	679
Colorado	16	67	23	18	67	2	218	38	87
Connecticut	50	82	42	24	38	0	108	13	191
Delaware	5	2	7	1	3	0	6	16	3
District of Colombia	8	39	1	-------	17	3	98	18	20
Florida	8	49	28	15	13	13	94	63	15
Georgia	4	84	21	16	55	7	42	330	48
Idaho	7	7	17	26	16	25	[1] 2	4	56
Illinois	188	325	128	212	314	31	1,167	223	1,218
Indiana	15	74	24	9	104	94	147	70	121
Iowa	12	42	16	9	45	37	51	29	64
Kansas	24	36	81	19	139	9	222	99	246
Kentucky [3]	-------	-------	-------	-------	-------	-------	-------	-------	-------
Louisiana	8	77	18	1	28	8	[1] 151	167	25
Maine	16	31	18	17	56	0	21	30	48
Maryland	18	108	40	17	46	0	295	209	218
Massachusetts	72	216	253	145	349	0	522	69	365
Michigan	147	212	104	99	296	59	447	87	673
Minnesota	54	119	32	-------	195	0	[1] 219	32	53
Mississippi	310	105	471	165	47	7	312	280	870
Missouri	10	87	38	47	93	22	187	104	183
Montana	9	21	10	1	159	1	40	44	20
Nebraska	12	15	66	27	53	15	21	22	38
Nevada [3]	-------	-------	-------	-------	-------	-------	-------	-------	-------
New Hampshire	-------	3	-------	-------	15	0	-------	1	-------
New Jersey	65	274	36	-------	133	0	396	53	554
New Mexico [4]	-------	-------	-------	-------	-------	-------	-------	-------	-------
New York	322	680	380	389	382	11	1,579	188	1,210
North Carolina	30	232	705	-------	108	34	-------	313	915
North Dakota	2	15	18	4	65	13	5	3	80
Ohio	114	323	51	147	299	21	683	168	529
Oklahoma [5]	8	79	114	8	29	48	73	410	34
Oregon	26	23	45	18	28	37	50	21	48
Pennsylvania	210	447	247	203	348	1	722	214	780
Rhode Island	4	34	5	9	37	0	-------	19	21
South Carolina	33	221	218	-------	51	38	147	427	267
South Dakota	3	13	20	4	28	31	6	7	58
Tennessee	6	69	49	14	71	25	143	633	69
Texas [2]	-------	-------	-------	-------	-------	-------	-------	-------	-------
Utah [2]	-------	-------	-------	-------	-------	-------	-------	-------	-------
Vermont	13	12	58	45	-------	0	[1] 17	2	31
Virginia	43	134	48	-------	91	16	[1] 164	301	558
Washington	77	71	154	50	55	25	145	35	126
West Virginia	3	53	31	-------	109	47	51	157	79
Wisconsin	78	80	293	104	199	35	119	40	450
Wyoming	5	1	11	4	10	0	1	3	21

[1] Pulmonary.
[2] Reports received weekly.
[3] Reports received annually.
[4] Report not received at time of going to press.
[5] Exclusive of Oklahoma City and Tulsa.

Case Rates per 1,000 Population (Annual Basis) for the Month of August, 1927

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Alabama	0.03	0.48	0.64	0.12	0.33	0.05	1.83	1.64	0.53
Arizona	------	.10	.26	03	.26	.00	1.39	.46	.03
Arkansas	.22	.08	.31	1.03	.06	.07	[1] .42	1.18	.64
California	.55	1.03	.63	.36	.65	.08	2.56	.25	1.80
Colorado	.18	.73	.25	.14	.73	.02	2.39	.42	.95
Connecticut	.36	.59	.30	.17	.27	.00	.78	.09	1.87
Delaware	.24	.10	.34	.05	.15	.00	.29	.78	.15
District of Columbia	.17	.85	.02	------	.37	.07	2.14	.39	.44
Florida	.07	.42	.24	.13	.11	.11	.81	.54	.13
Georgia	.01	.81	.08	.06	.20	.03	.16	1.23	.18
Idaho	.15	.15	.37	.57	.35	.55	[1] .04	.09	1.23
Illinois	.30	.52	.21	.34	.51	.05	1.88	.38	1.97
Indiana	.06	.28	.09	.03	.39	.35	.55	.26	.45
Iowa	.06	.20	.08	.04	.22	.18	.25	.14	.31
Kansas	.15	.23	.52	.12	.90	.06	1.43	.64	1.58
Kentucky [2]	------	------	------	------	------	------	------	------	------
Louisiana	.02	.47	.08	.01	.17	.02	[1] .92	1.02	.15
Maine	.24	.46	.19	.25	.83	.00	.31	.45	.71
Maryland	.13	.80	.29	.13	.34	.00	2.18	1.54	1.61
Massachusetts	.20	.60	.70	.40	.97	.00	1.45	.19	1.01
Michigan	.39	.56	.27	.26	.78	.15	1.17	.23	1.70
Minnesota	24	.52	.14	------	.85	.00	[1] .96	.14	.23
Mississippi	2.04	.69	3 10	1.08	.31	.05	2.05	1.84	5.72
Missouri	03	.29	.13	.16	.31	.07	.63	.35	.[illegible]1
Montana	.15	.35	.16	.02	2.62	.02	.66	.73	.33
Nebraska	.10	.13	.56	.23	.45	.13	.18	.19	.32
Nevada [3]	------	------	------	------	------	------	------	------	------
New Hampshire	------	.08	------	------	.30	.00	------	.03	------
New Jersey	.20	.86	.11	------	.42	.00	1.24	.17	1.74
New Mexico [4]	------	------	------	------	------	------	------	------	------
New York	.33	.70	.39	.40	.39	.01	1.63	.19	1.25
North Carolina	.12	.94	2.87	------	.44	.14	------	1 27	3.72
North Dakota	.04	.28	.33	.07	1.19	.24	.09	.06	.55
Ohio	.20	.57	.09	.26	.52	.04	1.20	.29	.93
Oklahoma [5]	.04	.44	.63	.04	.16	.27	.40	2.27	.19
Oregon	.34	30	.60	.24	.37	.49	.06	.28	.63
Pennsylvania	.25	.54	.30	.25	.42	.00	.87	.26	.88
Rhode Island	.07	.57	.08	.15	.62	.00	------	.32	.35
South Carolina	.21	1.41	1 39	------	.33	.24	.94	2.73	1.70
South Dakota	.05	.22	.44	.07	.47	.52	.10	.12	.98
Tennessee	.03	.33	.23	.07	.34	.12	.68	3.00	.33
Texas [2]	------	------	------	------	------	------	------	------	------
Utah [2]	------	------	------	------	------	------	------	------	------
Vermont	.43	.40	1.94	1.50	------	.00	[1] .57	.07	1.04
Virginia	.20	.62	.22	------	.42	.07	[1] .76	1 39	2.58
Washington	.58	.54	1.16	.38	.41	.19	1.09	.26	.95
West Virginia	.02	.37	.22	------	.76	.33	.35	1.09	.55
Wisconsin	.31	.32	1.18	.42	.80	.14	.48	.16	1 82
Wyoming	.24	.05	.54	.20	.49	.00	.05	.15	1.03

[1] Pulmonary.
[2] Reports received weekly.
[3] Reports received annually.
[4] Report not received at time of going to press.
[5] Exclusive of Oklahoma City and Tulsa.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 100 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,860,000. The estimated population of the 94 cities reporting deaths is more than 30,190,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended October 22, 1927, and October 23, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
41 States	2,558	2,402	
100 cities	994	1,178	1,111
Measles:			
41 States	1,395	2,111	
100 cities	324	288	
Poliomyelitis:			
41 States	493	81	
Scarlet fever:			
41 States	2,212	2,432	
100 cities	691	885	729
Smallpox:			
41 States	178	217	
100 cities	42	18	26
Typhoid fever:			
41 States	786	1,126	
100 cities	118	148	134
Deaths reported			
Influenza and pneumonia:			
94 cities	497	524	
Smallpox:			
94 cities	0	0	

City reports for week ended October 22, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excludede and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	14	2	1	0	0	0	0	1
New Hampshire:									
Concord	22,546	0	0	0	0	0	0	0	1
Vermont:									
Barre	10,008	0	0	0	0	0	0	0	[illegible]
Massachusetts:									
Boston	779,620	23	43	16	3	1	76	3	[illegible]
Fall River	128,993	0	4	4	0	0	1	0	[illegible]
Springfield	142,065	4	3	6	1	1	1	2	[illegible]
Worcester	190,757	11	5	4	0	0	0	7	[illegible]
Rhode Island:									
Pawtucket	69,760	0	1	1	0	0	0	0	[illegible]
Providence	267,918	0	6	5	0	0	1	1	[illegible]
Connecticut:									
Bridgeport	(1)	0	9	7	0	0	0	1	[illegible]
Hartford	160,197	3	5	9	0	0	0	0	[illegible]
New Haven	178,927	7	1	0	0	0	1	2	[illegible]

[1] No estimate made.

City reports for week ended October 22, 1927—Continued

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	13	16	20		0	1	1	7
New York	5,873,356	24	128	145	6	4	27	15	74
Rochester	316,786	8	11	1		1	0	1	5
Syracuse	182,003	4	8	1		0	8	2	6
New Jersey:									
Camden	128,642	5	8	10	0	0	0	0	0
Newark	452,513	1	10	17	5	0	0	12	4
Trenton	132,020	0	4	0	0	0	1	0	1
Pennsylvania:									
Philadelphia	1,979,364	29	63	40		6	0	18	29
Pittsburgh	631,563	12	26	52		3	92	10	25
Reading	112,707	5	3	3		0	1	1	2
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	2	13	6	0	1	0	0	11
Cleveland	936,485	9	49	77	2	0	2	19	8
Columbus	279,836	5	9	13	0	0	0	1	1
Toledo	287,380	10	14	6	4	4	15	0	2
Indiana:									
Fort Wayne	97,846		4						
Indianapolis	358,819	3	14	16	0	0	4	5	3
South Bend	80,091	1	3	0	0	0	0	0	1
Terre Haute	71,071	0	2	4	0	0	0	0	1
Illinois:									
Chicago	2,995,239	25	96	84	8	5	4	13	42
Springfield	63,923	0	3	0	0	0	2	10	2
Michigan:									
Detroit	1,245,824	12	72	65	2	1	9	23	16
Flint	130,316	9	13	7	0	0	1	10	5
Grand Rapids	153,698	7	6	0	1	1	6	1	2
Wisconsin:									
Kenosha	50,891	1	2	1	1	0	0	7	0
Madison	46,385	0	0	0	0	0	0	0	3
Milwaukee	509,192	21	24	7	0	0	3	9	4
Racine	67,707	2	2	2	0	0	1	0	1
Superior	39,671	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	5	3	0	0	0	0	0	1
Minneapolis	425,435	17	32	12	0	2	1	0	7
St. Paul	246,001	10	20	5	0	1	1	3	10
Iowa:									
Davenport	52,469	0	2	0	0		0	0	
Sioux City	76,411	5	3	0	0		0	1	
Waterloo	36,771	9	0	0	0		3	0	
Missouri:									
Kansas City	367,481	8	12	4	0	3	2	7	9
St. Joseph	78,342	5	3	0	1	0	0	1	1
St. Louis	821,543	3	50	36	0	0	2	6	
North Dakota:									
Fargo	26,403	8	1	0	0	0	0	0	0
Grand Forks	14,811	6	0	0	0		0	0	
South Dakota:									
Aberdeen	15,036	0	0	0	0		1	0	
Sioux Falls	30,127	0	0	0	0		1	0	
Nebraska:									
Lincoln	60,941	14	2	0	0	0	0	11	0
Omaha	211,768	4	12	2	0	0	1	1	3
Kansas:									
Topeka	55,411	0	2	4	0	0	0	0	0
Wichita	88,367	5	4	2	0	0	1	0	0

City reports for week ended October 22, 1927—Continued

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	0	3	1	0	0	0	0	0
Maryland:									
Baltimore	796,296	16	28	22	5	1	3	5	13
Cumberland	33,741	0	0	0	0	0	0	0	1
Frederick	12,035	0	1	0	0	0	0	0	0
District of Columbia:									
Washington	497,906	2	16	22	0	0	0	0	12
Virginia:									
Lynchburg	30,395	1	3	8	0	0	0	0	1
Norfolk	(1)	4	4	5	0	0	0	0	2
Richmond	186,403	0	25	18	0	2	3	0	1
Roanoke	58,208	0	7	4	0	0	6	1	0
West Virginia:									
Charleston	49,019	0	3	1	2	1	0	0	0
Wheeling	56,208	3	3	0	0	0	1	0	1
North Carolina:									
Raleigh	30,371	0	4	1	0	0	0	0	1
Wilmington	37,061	0	1	0	0	0	6	0	1
Winston-Salem	69,031	0	5	3	0	0	1	0	3
South Carolina:									
Charleston	73,125	0	1	1	19	0	3	0	2
Columbia	41,225	0	3	1	0	------	2	1	2
Greenville	27,311	0	2	2	0	0	0	1	0
Georgia:									
Atlanta	(1)	1	11	11	15	2	0	1	0
Brunswick	16,809	0	0	0	0	0	0	4	0
Savannah	93,134	0	3	4	9	0	0	0	1
Florida:									
Miami	69,754	0	------	3	0	0	0	2	1
St. Petersburg	26,847	------	0	------	------	0	------	------	0
Tampa	94,743	0	2	3	1	0	0	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	3	1	0	0	0	0	1
Lexington	46,895	0	------	0	0	0	0	0	0
Louisville	305,935	1	11	0	1	0	0	1	3
Tennessee:									
Memphis	174,533	0	11	6	0	1	10	0	7
Nashville	136,220	1	6	1	0	2	0	2	5
Alabama:									
Birmingham	205,670	0	7	22	3	2	0	1	6
Mobile	65,955	0	2	2	0	0	0	0	3
Montgomery	46,481	0	3	1	0	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	0	2	0	0	------	0	0	------
Little Rock	74,216	0	2	5	0	0	1	0	3
Louisiana:									
New Orleans	414,493	0	10	11	3	3	0	0	7
Shreveport	57,857	0	1	2	0	0	0	0	1
Oklahoma:									
Tulsa	124,478	1	------	6	0	------	2	0	------
Texas:									
Dallas	194,450	0	13	26	0	0	0	0	4
Galveston	48,375	0	0	0	0	0	0	0	0
Houston	164,954	0	4	7	0	0	1	2	3
San Antonio	198,069	0	2	13	0	0	7	0	2
MOUNTAIN									
Montana:									
Billings	17,971	1	0	0	0	0	0	0	0
Great Falls	29,883	0	1	0	0	0	1	1	1
Helena	12,037	2	0	0	0	0	0	0	0
Missoula	12,668	5	0	1	0	0	0	0	0

[1] No estimate made.

City reports for week ended October 22, 1927—Continued

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
MOUNTAIN—continued									
Idaho:									
Boise	23,042	0	0	0	0	0	0	1	0
Colorado:									
Denver	280,911	37	16	7		2	4	4	7
Pueblo	43,787	1	4	1	0	0	0	0	2
New Mexico:									
Albuquerque	21,000	0	2	0	0	0	1	0	0
Utah:									
Salt Lake City	130,948	13	4	8	0	0	3	3	6
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	(1)	25	8	5	0		10	6	
Spokane	108,897	13	4	0	0		1	0	
Tacoma	104,455	3	4	3	0	0	0	1	0
Oregon.									
Portland	282,383	10	11	5	1	0	1	1	6
California:									
Los Angeles	(1)	11	40	57	7	0	1	3	24
Sacramento	72,260	5	2	2	0	0	1	0	2
San Francisco	557,530	35	18	17	2	4	6	9	3

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine.											
Portland	1	2	0	0	0	1	1	0	0	4	19
New Hampshire.											
Concord	0	0	0	0	0	1	0	0	0	0	9
Vermont.											
Barre	1	0	0	0	0	0	0	0	0	0	1
Massachusetts:											
Boston	31	26	0	0	0	8	3	3	1	27	
Fall River	2	4	0	0	0	2	1	0	0	0	23
Springfield	5	0	0	0	0	1	0	0	0	1	30
Worcester	8	5	0	0	0	4	0	1	0	2	36
Rhode Island:											
Pawtucket	0	1	0	0	0	0	0	0	0	0	18
Providence	4	15	0	0	0	1	0	0	0	0	49
Connecticut.											
Bridgeport	4	6	0	0	0	1	0	0	0	0	24
Hartford	4	1	0	0	0	0	0	0	1	1	38
New Haven	5	5	0	0	0	0	1	3	0	5	42
MIDDLE ATLANTIC											
New York:											
Buffalo	14	25	0	0	0	10	2	3	0	6	119
New York	62	41	0	0	0	[2] 81	25	18	0	115	1,127
Rochester	5	8	0	0	0	3	1	0	0	6	64
Syracuse	6	2	0	0	0	1	1	1	0	4	55
New Jersey:											
Camden	3	0	0	0	0	2	1	0	0	0	33
Newark	8	7	0	0	0	10	2	2	1	24	91
Trenton	1	0	0	0	0	5	1	1	0	1	32
Pennsylvania:											
Philadelphia	46	39	0	0	0	23	9	5	1	15	443
Pittsburgh	31	24	0	0	0	13	2	0	1	18	178
Reading	1	3	0	0	0	0	1	0	0	2	23

[1] No estimate made.

[2] Pulmonary tuberculosis only.

City reports for week ended October 22, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths all causes
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	10	3	0	0	0	13	1	1	0	2	130
Cleveland	23	20	1	0	0	10	3	2	0	9	162
Columbus	8	12	0	0	0	5	1	1	0	3	62
Toledo	9	11	0	0	0	2	2	1	1	3	63
Indiana:											
Fort Wayne	1	------	0	------	------	------	1	------	------	------	------
Indianapolis	7	13	1	0	0	3	1	3	0	4	100
South Bend	2	1	0	0	0	0	0	0	0	0	13
Terre Haute	2	1	0	0	0	1	0	0	0	0	17
Illinois											
Chicago	72	47	0	0	0	43	6	13	0	87	717
Springfield	2	5	0	0	0	2	1	2	0	3	19
Michigan											
Detroit	56	38	1	0	0	24	5	0	0	48	246
Flint	8	21	0	0	0	1	1	1	0	3	37
Grand Rapids	7	5	1	0	0	1	0	0	0	3	35
Wisconsin											
Kenosha	2	1	0	0	0	0	0	0	0	1	4
Madison	1	6	0	0	0	1	0	0	0	0	15
Milwaukee	18	13	2	0	0	7	1	0	0	17	87
Racine	4	3	1	0	0	1	0	0	0	7	10
Superior	2	5	0	0	0	1	0	1	0	0	10
WEST NORTH CENTRAL											
Minnesota											
Duluth	6	2	0	0	0	1	0	0	0	3	25
Minneapolis	36	17	2	0	0	4	2	0	0	2	97
St. Paul	16	2	2	0	0	2	1	1	1	2	42
Iowa:											
Davenport	1	2	0	0	------	------	0	0	------	0	------
Sioux City	2	3	1	0	------	------	0	0	------	2	------
Waterloo	2	1	0	0	------	------	1	0	------	0	------
Missouri											
Kansas City	9	14	0	1	0	4	2	1	2	6	94
St. Joseph	4	0	0	20	0	1	1	0	1	0	22
St. Louis	29	13	0	0	0	5	5	6	0	12	208
North Dakota:											
Fargo	2	2	0	0	0	0	0	0	0	0	4
Grand Forks	0	0	0	0	------	------	0	1	------	0	------
South Dakota											
Aberdeen	2	3	0	0	------	------	1	0	------	0	------
Sioux Falls	1	3	1	0	------	------	0	0	------	0	6
Nebraska:											
Lincoln	2	2	0	0	0	0	0	0	0	1	19
Omaha	4	7	1	0	0	2	0	0	0	0	51
Kansas:											
Topeka	3	3	0	0	0	0	0	2	1	10	16
Wichita	3	5	0	0	0	0	0	1	0	0	18
SOUTH ATLANTIC											
Delaware:											
Wilmington	3	3	0	0	0	1	1	1	0	0	23
Maryland:											
Baltimore	11	11	0	0	0	10	8	4	1	15	203
Cumberland	0	4	0	0	0	0	1	0	0	0	10
Frederick	0	0	0	0	0	1	0	1	0	0	5
District of Col.:											
Washington	12	17	0	0	0	14	3	3	0	1	113
Virginia:											
Lynchburg	2	3	0	0	0	1	0	0	0	2	17
Norfolk	1	3	0	0	0	4	1	0	0	5	------
Richmond	8	1	0	0	0	1	1	0	0	0	51
Roanoke	8	6	0	0	0	0	1	1	0	0	6
West Virginia:											
Charleston	1	7	0	0	0	1	1	1	0	0	17
Wheeling	4	0	0	0	0	0	1	0	0	0	21
North Carolina:											
Raleigh	3	0	0	0	0	2	0	0	0	0	12
Wilmington	1	0	0	0	0	0	0	1	0	0	15
Winston-Salem	2	16	0	0	0	1	0	1	0	2	34

City reports for week ended October 22, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
SOUTH ATLANTIC—continued											
South Carolina:											
Charleston	1	1	0	0	0	2	0	2	0	0	27
Columbia	0	0	0	0			0	0		1	8
Greenville	0	2	0	0	0	0	1	0	0	3	3
Georgia:											
Atlanta	7	13	1	0	0	6	1	3	1	1	64
Brunswick	0	0	0	0	0	0	0	0	0	0	4
Savannah	1	2	0	4	0	5	1	0	0	0	37
Florida:											
Miami		0	0	0	0	1		0	0	0	15
St. Petersburg	0		0		0	1	0		0		12
Tampa	0	0	0	0	0	1	0	0	0	5	18
EAST SOUTH CENTRAL											
Kentucky:											
Covington	2	1	0	1	0	2	1	0	0	0	26
Lexington		0		0	0	0	0	0	0	0	14
Louisville	4	13	0	0	0	2	3	1	0	1	67
Tennessee:											
Memphis	5	12	1	0	0	6	3	3	1	0	66
Nashville	4	1	0	0	0	2	4	0	0	0	51
Alabama:											
Birmingham	5	2	0	0	0	6	2	2	1	0	76
Mobile	1	0	1	0	0	1	0	0	0	0	21
Montgomery	1	0	0	0	0	0	0	0	0	0	
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	0	0	0			0	0		0	
Little Rock	2	5	0	0	0	0	1	0	0	0	
Louisiana:											
New Orleans	4	2	0	0	0	18	3	5	0	0	135
Shreveport	1	2	0	0	0	1	0	2	0	0	27
Oklahoma:											
Tulsa		2		1				0		0	
Texas:											
Dallas	4	4	0	0	0	3	2	0	1	2	55
Galveston	0	0	0	0	0	0	0	0	0	0	10
Houston	1	3	0	0	0	4	1	0	0	0	65
San Antonio	1	3	0	0	0	7	0	0	0	0	50
MOUNTAIN											
Montana:											
Billings	0	1	0	0	0	0	0	0	0	1	3
Great Falls	1	3	1	2	0	0	0	0	0	0	7
Helena	1	0	0	2	0	0	0	0	0	0	5
Missoula	0	0	0	0	0	0	0	1	1	0	7
Idaho:											
Boise	1	0	0	0	0	0	0	0	0	0	9
Colorado:											
Denver	7	23	1	0	0	6	1	1	1	0	72
Pueblo	1	1	0	0	0	1	0	1	0	0	7
New Mexico:											
Albuquerque	1	2	0	0	0	2	2	1	0	0	8
Utah:											
Salt Lake City	2	3	0	4	0	0	1	6	0	5	31
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	5
PACIFIC											
Washington:											
Seattle	8	5	1	0			1	0		2	
Spokane	7	10	2	4			1	0		0	
Tacoma	3	0	1	1	0	1	0	2	1	0	25
Oregon:											
Portland	9	2	3	4	0	2	2	0	0	1	61
California:											
Los Angeles	13	18	3	0	0	20	3	3	1	10	256
Sacramento	1	1	0	2	0	3	1	0	0	0	
San Francisco	7	18	1	1	0	8	1	1	0	1	146

City reports for week ended October 22, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Maine:									
Portland	0	0	0	0	0	0	0	2	1
Massachusetts:									
Boston	0	0	0	0	0	0	1	33	2
Springfield	0	1	0	0	0	0	1	1	1
Worcester	0	0	0	0	0	0	0	4	0
Rhode Island:									
Providence	0	0	1	0	0	0	0	4	0
MIDDLE ATLANTIC									
New York:									
New York	1	1	2	0	0	0	11	12	1
Rochester	0	0	0	1	0	0	0	0	0
New Jersey:									
Newark	0	0	1	0	0	0	0	1	0
Pennsylvania:									
Philadelphia	1	0	0	0	0	0	1	2	2
Pittsburgh	0	0	0	0	0	0	0	0	1
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	0	0	0	0	0	0	0	2	0
Cleveland	1	0	0	0	0	0	1	2	0
Columbus	0	0	1	0	0	0	0	1	1
Toledo	1	0	0	0	0	0	0	1	0
Indiana:									
Indianapolis	0	0	0	0	0	0	0	1	0
Illinois:									
Chicago	5	2	1	0	1	1	3	9	1
Michigan:									
Detroit	1	1	1	0	0	0	1	2	1
Flint	0	0	0	0	0	0	0	1	1
Grand Rapids	0	0	0	0	0	0	0	1	0
Wisconsin:									
Madison	1	1	0	0	0	0	0	0	0
Milwaukee	1	0	0	0	0	0	0	1	0
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	1	0	1	1	0	0	0	1	1
Iowa:									
Davenport	0		0		0		0	1	
Waterloo	0		0		0		0	1	
Missouri:									
Kansas City	0	0	0	1	0	0	0	2	0
SOUTH ATLANTIC									
Delaware:									
Wilmington	0	0	0	0	0	0	0	1	0
Maryland:									
Baltimore	0	0	0	0	0	0	0	1	0
District of Columbia:									
Washington	0	0	0	0	0	0	0	3	0
Virginia:[1]									
Lynchburg	0	0	0	0	0	1	0	0	0
Roanoke	0	0	0	0	0	1	0	0	0
West Virginia:									
Wheeling	0	0	0	0	0	0	0	3	0
North Carolina:									
Raleigh	0	0	0	0	0	2	0	0	0
Winston-Salem	0	0	0	0	0	2	0	0	0
South Carolina:									
Charleston[2]	0	0	0	0	2	1	0	0	0
Georgia:[2]									
Atlanta	1	1	0	0	0	0	0	0	0
Brunswick	0	0	0	0	0	1	0	0	0
Florida:									
Tampa	1	1	0	0	1	0	0	0	0

[1] Typhus fever: 1 case at Norfolk, Va.
[2] Dengue: 16 cases at Charleston, S. C., and 1 case at Savannah, Ga

City reports for week ended October 22, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
EAST SOUTH CENTRAL									
Kentucky:									
Lexington	0	0	0	0	0	0		1	0
Louisville	0	0	0	0	0	0	0	1	0
Tennessee:									
Memphis	0	0	0	0	0	1	0	1	0
Nashville	0	0	0	0	0	0	0	1	1
Alabama:									
Birmingham	0	0	0	0	1	1	0	0	0
Mobile	0	0	0	0	1	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	1	0	0	0	0	1	0	0	0
Louisiana:									
New Orleans	0	0	0	0	0	0	0	1	0
Shreveport	0	0	0	0	0	1	0	0	0
Texas:									
Dallas	0	0	0	0	0	1	0	2	0
MOUNTAIN									
Montana:									
Great Falls	0	0	0	0	0	0	0	1	0
Missoula	1	0	0	0	0	0	0	0	0
Colorado:									
Denver	2	0	0	0	0	0	0	4	0
Utah:									
Salt Lake City	1	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	0		0		0		0	1	
Spokane	1		0		0		0	1	
Tacoma	0	0	0	0	0	0	0	5	1
Oregon:									
Portland	0	0	0	0	0	0	0	2	1
California:									
Los Angeles	1	1	0	0	0	2	1	6	0
San Francisco	0	0	0	0	0	0	1	1	0

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended October 22, 1927, compared with those for a like period ended October 23, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, September 18 to October 22, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Sept. 25, 1926	Sept. 24, 1927	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927
101 cities	107	103	127	130	159	143	165	144	203	[2] 168
New England	73	91	66	109	66	132	85	128	85	123
Middle Atlantic	70	96	81	123	119	129	100	123	122	143
East North Central	128	105	133	130	188	158	218	138	260	[2] 191
West North Central	127	87	143	123	177	145	210	119	240	129
South Atlantic	127	105	162	165	214	170	216	203	300	194
East South Central	134	82	269	66	253	153	269	158	398	168
West South Central	69	206	210	197	176	197	219	256	279	268
Mountain	137	234	292	189	173	126	164	198	255	153
Pacific	212	76	174	120	198	99	174	154	190	220

MEASLES CASE RATES

101 cities	38	27	37	25	31	40	43	50	49	[2] 55
New England	38	39	21	53	33	118	26	132	26	186
Middle Atlantic	9	30	10	33	11	56	9	53	12	64
East North Central	24	18	25	13	29	11	36	17	50	[2] 22
West North Central	28	20	10	6	26	12	44	14	42	22
South Atlantic	11	36	13	29	15	31	20	69	26	45
East South Central	10	15	5	20	5	56	0	127	21	51
West South Central	0	0	0	4	0	8	13	55	4	38
Mountain	118	45	109	0	109	27	237	18	337	72
Pacific	308	52	327	47	179	45	289	58	276	50

SCARLET FEVER CASE RATES

101 cities	79	67	100	84	111	103	129	96	152	[2] 117
New England	71	123	104	102	144	139	144	130	193	151
Middle Atlantic	56	42	51	59	57	101	62	63	51	74
East North Central	80	69	98	101	120	102	132	108	155	[2] 127
West North Central	153	60	198	79	216	107	319	175	373	137
South Atlantic	78	107	110	107	99	123	125	91	162	161
East South Central	83	46	98	117	115	66	145	82	222	148
West South Central	52	50	69	105	69	67	86	88	95	80
Mountain	118	153	319	36	301	126	264	108	447	279
Pacific	118	71	174	76	158	76	204	97	233	136

SMALLPOX CASE RATES

101 cities	3	6	1	4	3	5	4	6	3	[2] 7
New England	0	0	0	0	0	0	0	0	0	0
Middle Atlantic	0	0	0	0	0	0	0	0	0	0
East North Central	1	1	0	1	1	1	3	5	3	[2] 0
West North Central	2	8	2	12	2	14	6	26	0	42
South Atlantic	6	0	4	4	0	4	4	2	9	7
East South Central	0	10	0	0	10	0	0	0	10	5
West South Central	13	0	0	8	4	4	4	4	0	0
Mountain	0	162	9	54	9	54	9	72	0	72
Pacific	19	21	5	24	19	31	32	16	16	21

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926, and 1927, respectively.
[2] Fort Wayne, Ind., not included.

Summary of weekly reports from cities, September 18 to October 22, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	Sept. 25, 1926	Sept. 24, 1927	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927
101 cities	44	28	42	19	33	25	32	19	26	[2] 20
New England	9	68	17	12	17	23	57	16	19	16
Middle Atlantic	45	24	28	18	27	21	26	16	20	15
East North Central	26	10	33	8	23	17	16	18	12	[2] 16
West North Central	26	14	40	20	22	28	14	22	22	22
South Atlantic	91	45	114	20	76	47	65	27	76	33
East South Central	165	87	129	117	145	20	140	31	98	31
West South Central	77	71	47	17	21	71	26	29	21	29
Mountain	36	36	82	36	64	54	46	63	27	81
Pacific	21	13	19	18	21	8	16	8	13	16

INFLUENZA DEATH RATES

	Sept. 25, 1926	Sept. 24, 1927	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927
95 cities	6	3	6	6	4	5	6	6	7	[2] 9
New England	5	0	2	0	0	5	5	2	7	5
Middle Atlantic	3	2	2	4	3	6	4	8	8	7
East North Central	3	1	5	5	2	1	2	3	5	[2] 5
West North Central	8	2	0	8	6	4	11	2	2	12
South Atlantic	9	11	9	4	6	4	8	7	8	11
East South Central	10	10	10	25	5	10	16	10	10	25
West South Central	22	9	35	22	13	9	13	13	13	13
Mountain	9	0	18	27	18	45	27	9	27	18
Pacific	7	0	7	7	0	3	11	3	0	14

PNEUMONIA DEATH RATES

	Sept. 25, 1926	Sept. 24, 1927	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927
95 cities	65	59	69	56	64	65	77	71	86	[2] 77
New England	75	70	87	58	33	81	75	95	83	86
Middle Atlantic	70	70	71	62	76	71	88	72	104	75
East North Central	45	44	59	41	54	58	62	49	61	[2] 66
West North Central	55	25	70	33	63	42	53	60	49	64
South Atlantic	79	66	66	66	61	57	89	108	113	72
East South Central	88	82	109	87	83	82	52	46	98	127
West South Central	93	69	66	95	88	69	106	69	53	86
Mountain	55	54	155	81	55	72	118	117	128	144
Pacific	78	65	28	45	53	69	81	83	99	100

[2] Fort Wayne, Ind., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREGN AND INSULAR

THE FAR EAST

Report for week ended October 15, 1927.—The following report for the week ended October 15, 1927, was transmitted by the Eastern Bureau of the Health Section of the Secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Iraq: Basra	0	0	1	0	2	2
British India.						
Bombay	----	1	----	0	3	0
Tuticorin	----	0	----	0	2	0
Negapatam	----	0	----	0	1	0
Madras	----	0	----	1	2	0
Calcutta	----	0	----	19	1	1
Rangoon	----	1	----	0	0	0
Siam. Bangkok	0	0	2	1	0	0

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Straits Settlements:						
Singapore	0	0	1	0	0	0
Dutch East Indies:						
Banjermasin	0	0	0	0	4	0
Samarinda	0	0	0	0	4	1
China:						
Canton	0	0	2	2	0	0
Amoy	0	0	2	----	0	0
Shanghai (International settlement)	0	0	----	2	0	0

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Aden Protectorate.—Perim, Kamaran, Aden.

Arabia—Bahrein.

Persia.—Bender-Abbas, Mohammerah, Bushire.

Ceylon.—Colombo.

India.—Karachi, Chittagong, Cochin, Vizagapatam, Moulmein, Bassein.

Portuguese India.—Nova Goa

Federated Malay States.—Port Swettenham.

Straits Settlements.—Penang.

Dutch East Indies.—Batavia, Semarang, Cheribon, Padang, Belawan-Deli, Tarakan, Palembang, Menado, Sabang, Surabaya, Makassar, Balikpapan.

Sarawak.—Kuching.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

Portuguese Timor.—Dilly.

Philippine Islands.—Iloilo, Jolo, Cebu, Zamboanga, Manila.

French Indo-China.—Saigon and Cholon, Tourrane, Haiphong.

China.—Tsingtao, Tien-Tsin, Chinwang-Tao.

Hong Kong.

Macao

Wei-hai-wei

Formosa—Keelung, Takao.

Chosen.—Chemulpo, Fusan.

Manchuria—Yingkow, Antung, Harbin, Mukden, Changchun, Newchang.

Kwantung—Port-Arthur, Dairen.

Japan—Nagasaki, Yokohama, Niigata, Shimonoseki, Tsuruga, Kobe, Osaka, Hakodate, Moji.

AUSTRALASIA AND OCEANIA

Australia—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns, Port Moresby.

New Guinea—Port Moresby.

New Britain, Mandated Territory.—Rabaul and Kokopo.

New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.

Western Samoa.—Apia.

New Caledonia.—Noumea.

Fiji.—Suva.

Hawaii.—Honolulu.

Society Islands.—Papeete.

AFRICA

Egypt.—Alexandria, Port Said, Suez.
Anglo-Egyptian Sudan.—Port Sudan, Suakin.
Eritrea.—Massaua.
French Somaliland.—Dijibouti.
British Somaliland.—Berbera.
Italian Somaliland.—Mogadiscio.
Kenya.—Mombasa.
Zanzibar.—Zanzibar.
Tanganyika.—Dar-es-Salaam.
Seychelles.—Victoria.
Portuguese East Africa.—Mozambique, Beira, Lourenco-Marques.
Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.
Mauritius.—Port Louis.
Reunion.—Saint Denis.
Madagascar.—Majunga, Diego-Suarez, Tamatave.

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from—

Dutch East Indies.—Pontianak. *Union of Socialist Soviet Republics.*—Vladivostok.

Belated information:

Week ended October 1: *Pondicherry* and *Karikal.*—Nil. *Bombay:* 4 smallpox cases.
Week ended October 8: *Haiphong.*—Nil. *Calcutta:* 11 deaths from cholera, 1 fatal case of smallpox. *Swatow:* 5 cholera cases.

ARGENTINA

Leprosy—Buenos Aires—June 27–October 2, 1927.—During the period June 27 to October 2, 1927, eight new cases of leprosy with three deaths were reported at Buenos Aires, Argentina.

BRITISH EAST AFRICA

Cerebrospinal meningitis—Uganda—May, 1927.—During the month of May, 1927, epidemic cerebrospinal meningitis was reported in Uganda, British East Africa, with 18 cases, and 16 deaths.

CANADA

Communicable diseases—Week ended October 22, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases from seven provinces of Canada for the week ended October 22, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever			4					4
Influenza	4							4
Poliomyelitis	1	2		6		1	10	20
Smallpox				38	5	11	9	63
Typhoid fever	4	17	21	27	10	7	3	89

Communicable diseases—Quebec—Week ended October 22, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended October 22, 1927, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	4	Scarlet fever	93
Chicken pox	15	Smallpox	5
Diphtheria	91	Tuberculosis	38
German measles	2	Typhoid fever	20
Influenza	1	Whooping cough	5
Measles	48		

Diphtheria—scarlet fever—Rivière du Loup—October 23-29, 1927.—During the week ended October 29, 1927, mild epidemics of diphtheria and scarlet fever were reported at Rivière du Loup and neighboring villages, Province of Quebec, Canada.

Typhoid fever—Montreal—January 2-October 29, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	June 11, 1927	128	36
Jan. 15, 1927	4	3	June 18, 1927	86	18
Jan. 22, 1927	1	2	June 25, 1927	75	23
Jan. 29, 1927	3	1	July 2, 1927	66	21
Feb. 5, 1927	1	0	July 9, 1927	52	10
Feb. 12, 1927	0	0	July 16, 1927	39	4
Feb. 19, 1927	1	2	July 23, 1927	22	9
Feb. 26, 1927	1	1	July 30, 1927	23	10
Mar. 5, 1927	9	1	Aug. 6, 1927	16	5
Mar. 12, 1927	203	4	Aug. 13, 1927	20	5
Mar. 19, 1927	383	14	Aug 20, 1927	14	4
Mar. 26, 1927	568	22	Aug. 27, 1927	8	3
Apr. 2, 1927	649	48	Sept 3, 1927	27	0
Apr. 9, 1927	886	40	Sept. 10, 1927	17	0
Apr. 16, 1927	175	38	Sept 17, 1927	13	2
Apr. 23, 1927	125	43	Sept. 24, 1927	6	3
Apr. 30, 1927	105	23	Oct. 1, 1927	15	1
May 7, 1927	106	19	Oct 8, 1927	14	1
May 14, 1927	367	16	Oct 15, 1927	5	1
May 21, 1927	770	26	Oct. 22, 1927	3	1
May 28, 1927	353	38	Oct. 29, 1927	9	1
June 4, 1927	239	37			

CANARY ISLANDS

Plague—Las Palmas—October 11, 1927.—Under date of October 11, 1927, four cases of plague were reported in the vicinity of Las Palmas, Canary Islands.

CHINA

Cerebrospinal meningitis—Foochow—Week ended September 24, 1927.—During the week ended September 24, 1927, fatal cases of epidemic cerebrospinal meningitis were reported at Foochow, China. The port was stated to have been declared infected.

JAPAN

Dysentery—Tokyo, city and prefecture—September 4-October 1, 1927.—During the period September 4 to October 1, 1927, dysentery was reported in the city and prefecture of Tokyo, Japan, as follows: Tokyo City—cases, 351; deaths, 153; population, 1,995,567. Prefecture (outside city)—cases, 416; deaths, 222; population, 2,489,577.

MEXICO

Mortality, gastroenteritis—Mazatlan—October 3-16, 1927.—During the two weeks ended October 16, 1927, seven deaths from gastroenteritis were reported at Mazatlan, Mexico. Population, 30,000.

PERSIA

Cholera epidemic in Persian Gulf Region.—Precautions to prevent spread.—According to information dated September 30, 1927, an epidemic of cholera of average intensity was declared prevalent July 28, 1927, in the Persian Gulf region, Persia, with localization at Abadan, Basra, and Mohammerah. Measures prescribed to prevent spread of infection were as follows:

(1) Passports for points in Syria and the Lebanon required to show anticholera vaccination within previous three months, two vaccinations, with from five to eight days' interval, being required.

(2) Closing of northern and western frontiers of Persia, leaving the Baghdad-Damascus Road the only authorized route of travel.

(3) Permanent sanitary barriers established at designated points to secure control of passports, vaccination of unvaccinated travelers, and diversion of travel toward Damascus. Establishment of supplementary barriers for travel to Homs and Aleppo and supervision of the railway line. Travelers allowed to pass under the conditions stated were required to state their ultimate destinations and were there subject to supervision by the proper sanitary authorities. Maritime travel is similarly controlled on embarkation at Beirut.

PERU

Mortality from communicable diseases—Arequipa—June–August, 1927.—During the three months ended August 31, 1927, mortality from communicable diseases was reported at Arequipa, Peru, as follows:

Disease	Deaths		
	June, 1927	July, 1927	August, 1927
Gastroenteritis	3	1	3
Influenza	5	7	15
Measles		3	3
Scarlet fever		1	
Tuberculosis	17	13	14
Typhoid fever			2
Typhus fever			2
Whooping cough			13

Population, estimated, 43,500.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

Reports Received During Week Ended November 11, 1927 [1]

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	Sept. 11-24	33		
Canton	Sept. 11-17	7	7	
Shanghai	Sept. 18-Oct. 1		10	Reported in International Settlement and French Concession.
India:				
Calcutta	Sept. 18-24	19	11	
Madras	Sept. 25-Oct 1	4	3	
Siam				Sept. 11-17, 1927: Cases, 21; deaths, 11. Apr. 1-Sept. 17, 1927: Cases, 733; deaths, 500.
Bangkok	Sept. 11-17	1	1	District.

PLAGUE

Place	Date	Cases	Deaths	Remarks
British East Africa:				
Tanganyika Territory	Aug 7-28		30	
Uganda	May 1-31	103	73	
Canary Islands:				
Las Palmas	Oct. 11	4		In zone.
Ceylon:				
Colombo	Sept 18-24	1	1	
India	Aug. 14-27	782	480	
Madras Presidency	Sept. 4-10	111	62	
Indo-China (French):				
Saigon	Sept. 2-16	2		
Java:				
Batavia	Sept. 11-17	17	17	Province.
East Java and Madura:				
Surabaya	Aug. 28-Sept 3	5	5	

SMALLPOX

Place	Date	Cases	Deaths	Remarks
British East Africa:				
Tanganyika Territory	Aug. 7-28		21	
Zanzibar	June 1-30	26	14	
Do	July 1-31	64	18	
Do	Aug 1-31	12	2	
Canada	Oct 16-22			Cases, 63.
Alberta	do	9		
Manitoba	do	5		
Ontario	do	38		
Toronto	do	6		
Quebec	do			Cases, 8.
Saskatchewan	do	11		
Moose Jaw	do	1		
China:				
Hong Kong	Sept. 12-17		1	
Great Britain	Oct. 9-15			Cases, 124.
England—				
Manchester	do	2		
Newcastle-on-Tyne	do	5		
India	Aug. 14-27			Cases, 2,550; deaths, 669.
Calcutta	Sept 18-24	2	2	
Madras	Sept 25-Oct. 1	3		
Rangoon	Sept 18-24	6	1	
Indo-China (French):				
Saigon	Sept. 3-9	1		
Iraq:				
Baghdad	Sept. 18-Oct 1	5	3	
Basra	Sept. 4-17	4	4	
Java:				
East Java and Madura—Surabaya	Aug. 28-Sept. 3	3		
Syria:				
Damascus	Sept. 11-20	1		

[1] From medical officers of the Public Health Service, American consuls and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended November 11, 1927—Continued

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	Oct. 1-10	1		In native.
Bulgaria:				
Sofia	Oct. 1-14	7		
Egypt:				
Cairo	June 25-July 1	1		
Peru:				
Arequipa	Aug. 1-31		2	
Poland				Aug. 29-Sept. 17, 1927: Cases, 17; deaths, 2.

Reports Received from June 25 to November 4, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-Sept. 10	70	11	
Canton	May 1-Sept. 10	74	39	
Foochow	July 24-Sept. 10			Present.
Hong Kong	July 17-Sept. 3	3	3	
Kulangsu	June 21	1		
Shanghai	June 19-25	2		
Do	July 31-Sept 17		104	In international settlement and French concession.
Swatow	May 15-Sept. 10	138	13	
Tientsin	Aug. 27-Sept 17	9		
India	Apr 17-Sept 8			Cases, 159,454, deaths, 87,607.
Bombay	May 8-Sept 17	127	57	
Calcutta	do	708	415	
Karachi	May 29-June 4	1	1	
Madras	June 19-Sept. 24	819	434	
Rangoon	May 8-Sept 24	20	16	
India, French settlements in	Mar. 30-July 16	171	109	
Indo-China (French)	Apr. 1-Aug. 10			Cases, 13,640.
Annam	do	2,936		
Cambodia	do	335		
Cochin-China	do	1,519		
Saigon	June 4-Sept. 2	11	4	
Laos	July 11-Aug. 10	137		
Tonkin	Apr. 1-Aug. 10	9,713		
Iraq:				
Baghdad	July 24-30	29	18	
Basra	July 17-Sept. 17	383	288	
Japan:				
Yokohama	July 31-Aug. 6	1	1	
Persia:				
Abadan	July 24-Aug. 13	215	183	
Ahwaz	July 31-Aug. 13	20	13	
Minab	Aug. 7-13		23	
Mohammerah	July 17-Aug. 27	194	155	
Nasseri	July 19-31		10	
Philippine Islands:				
Manila	July 17-Aug. 27	2		
Bulacan Province	June 7-July 8	3	2	
Leyte Province—				
Barugo	June 29	1	1	
Carigara	June 23	1	1	Final diagnosis not received.
Palo	May 18	1		
Siam	May 1-Sept. 10			Cases, 325; deaths, 198.
Bangkok	do	47	14	
On vessel:				
S. S. Adrastus	Reported Aug. 6	1	1	At Yokohama, Japan.
S. S. Montreal Maru	Sept. 20			At Muke, Japan.
S. S. Tabaristan	Oct. 6	1		Case in coolie removed at Basra.
S. S. Morea	Sept. 2			At Hong Kong; cholera-infected.
S. S. War Mehtar (oil tanker).	Aug. 4	1	1	At Saffagha, Egypt.

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 4, 1927—Continued

PLAGUE

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	Aug. 21-31	1		
Oran	Aug. 21-Sept. 10	5	4	
Argentina	Jan. 1-Aug. 2			Cases, 80; deaths, 44.
Buenos Aires	Apr. 10-May 7	4	3	
Cordoba	Jan. 11-Aug. 6	52	29	
Corrientes	June 1	1	1	
Entre Rios	Mar 29-Aug. 13	8	1	
Santa Fe	Apr 28-May 16	4	3	
Territory—				
Chaco—				
Barranqueras	May 29	2	2	
Formosa	June 25	3	2	
Pampa	July 27-Aug. 2	4		
Rio Negro	Aug. 6	1		
City—				
Merou	Reported July 14			Present.
Rosario	May 7	1	1	
Santa Fe	May 16	4	2	
Azores:				
St. Michaels Island	May 15-Aug. 27	6		
Riberia Grande	June 12-18	1		
Brazil:				
Sao Paulo	June 3-9	1	1	
British East Africa				
Kenya	Apr 24-July 31	73	14	
Mombassa	July 24-30	1	1	
Nairobi	May 22 28	6		
Tanganyika	Mar 29-May 28		37	
Do.	July 24-Aug 6		10	
Uganda	Jan 1-Feb 28	138	121	
Do.	Mar 27 June 18	366	300	
Canary Islands:				
Laguna district—				
Tejina	June 17	1		
Las Palmas	Oct. 8	4		
Ceylon.				
Colombo	May 1-Sept 17	20	13	Plague rats, 4.
China:				
Amoy	July 3 23			Present in surrounding country.
Mongolia	Reported Oct 11		200	Approximate.
Tientsin	Aug 14-20	2		
Tungliao	Reported Oct 15			Outbreak.
Ecuador				
Guayaquil	June 1-Aug 31	7		Rats taken, 72,410; found infected, 45.
Egypt.				
Alexandria	June 4-Sept 2	4		
Beni-Souef	June 4 July 13	5	2	
Biba	June 4 10	1		At Nama.
Dakhalia	June 24-July 9	6	1	
Minia	Aug 8-9	4		
Port Said	June 24-July 21	4	1	
Suez	Sept 4	1		
Tanta district	June 4-10	1		
Greece	May 1-June 30	4	3	
Athens	June 1 Aug 29	3		Including Piraeus.
Mytilene	Aug 9	1		
Patras	May 30-Oct 1	9	2	
Hawaii Territory:				
Hamakua	July 15-Aug. 30			2 plague rodents.
Honokaa	May 17-23	2	2	
Kukuihaele	Aug 12 17	1	1	Do.
Paauilo	July 26-Aug. 1		4	
India	Apr. 17-Sept. 3			Cases, 22,926; deaths, 8,796.
Bombay	May 8-Sept. 17	100	85	
Calcutta	Aug 21 Sept. 3	18	10	
Madras	May 1-Sept. 3	1,126	506	
Rangoon	May 8-Sept. 17	70	64	
Indo-China (French)	Apr. 1-Aug. 10	50		
Kwang-Chow-Wan	May 21-July 31	73		
Irak:				
Baghdad	Apr 8-May 28	12	1	
Java:				
Batavia	May 1-Sept. 10	275	275	Province.
East Java and Madura	May 22-July 16	28	27	
Pasoeroean Residency	May 9			Outbreak reported at Nagdiwang.
Surabaya	Apr 17-Aug. 27	70	69	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 4, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Madagascar				Mar. 16-Apr. 30, 1927: Cases, 256; deaths, 135.
Province—				
Ambositra	Mar. 16-July 31	99	92	
Antisirabi	Mar. 16-May 15	8	8	
Miarinarivo (Itasy)	Mar. 16-July 31	69	63	
Moramanga	May 16-July 31	28	27	
Tananarive	Mar. 16-July 31	233	204	
Tananarive Town	Mar. 16-June 30	22	20	
Mauritius:				
Port Louis	May 1-June 30	1	1	
Nigeria	Mar. 1-May 31	228	117	
Peru	Apr.-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	Apr. 1-July 31	13	8	
Lima City	Apr 1-30	5	1	
Senegal	May 23-Sept. 25			Cases, 1,030; deaths, 606.
Baol	June 2-Oct. 2	179	95	
Cayor Frontier	July 4-Oct 2	917	530	
Dakar	June 20-Oct 2	147	94	
Facel	July 6	17	8	
Guindel	June 20-26	11	2	
Louga district	Sept 18-25	5	4	
M'Bour	July 6-10	28	23	
Medina	June 13-19	2	2	
Pout	July 4-10	1		
Rufisque	May 23 Sept. 25	223	167	
Thies district	do	34	15	
Tivaouane	June 2-July 17	50	32	
Siam	Apr. 1-Aug 27			Cases, 10, deaths, 7.
Bangkok	May 8-June 11	2	1	
Syria:				
Beirut	June 11-July 10	3		
Tunisia	Apr. 21-July 10	144		
Tunis	July 25-Aug. 1	1		
Turkey:				
Constantinople	May 13-19	1		
Do	Sept. 18-24	1		
Union of South Africa				
Cape Province—				
Maraisburg district	May 1-14	2	2	Native.
Orange Free State—				
Edenburg district	July 17-26	3	3	Natives; on farm.
Rouxville district	July 24-Aug. 6	2	2	
On vessel:				
S. S. Avoroff	June 24-30	1		Greek warship at port of Athens.
S. S. Capafric	Aug. 23	3	1	At Duala, French Cameroons, from Nigeria.
S. S. Elcano	Aug. 19	1		At Piraeus, Greece.
S. S. Madonna	Aug. 24	1		At Dakar, Senegal, from ports south.
S. S. Ransholm	Aug. 5	3		At Gefle, Sweden, from Rufisque, Senegal.

SMALLPOX

Algeria	Apr. 21-July 31			Cases, 882.
Algiers	May 11-June 30	8		
Oran	May 21-Oct. 10	69		
Angola	June 1-July 31	45		
Arabia:				
Aden	July 17-Aug. 1	2	1	
Brazil:				
Bahia	Aug. 7-13	1		
Porto Alegre	July 1-Aug. 31	8		
Rio de Janeiro	May 22-Sept. 17	23	19	
British East Africa:				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 29-June 18	2	22	
Zanzibar	Apr. 1-May 31	19	7	
British South Africa:				
Northern Rhodesia	Apr. 30-Sept. 9	179	3	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 4, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Canada	June 5-Oct. 15			Cases, 635.
Alberta	June 12-Oct. 15			Cases, 224.
Calgary	June 12-Aug. 27	9		
British Columbia—				
Vancouver	May 23-Sept. 4	4		
Manitoba	June 5-Oct. 8			Cases, 40.
Winnipeg	June 12-Oct. 22	23		
Nova Scotia	Sept. 11-Oct. 15	2		
Halifax	Oct. 8-15	1		
Ontario	June 5-Oct. 15			Cases, 273.
Ottawa	June 12-Oct. 22	205		
Sarnia	Aug. 7-13	1		
Toronto	June 19-Oct. 15	15		
Windsor	Oct. 2-15	9		
Quebec	June 19-Aug. 27	15		
Saskatchewan	June 12-Oct. 15			Cases, 140.
Moose Jaw	Aug. 14-Oct. 18	23		
Regina	July 17-Oct. 8	15		
Ceylon	May 1-7			Cases, 3; deaths, 1.
Colombo	July 31-Aug. 6	1	1	
China:				
Amoy	May 8-28	1		
Do	July 3-16			Present in surrounding country.
Antung	July 4-31	3		
Chefoo	May 8-14			Present.
Foochow	May 8-Sept. 10			Do.
Hong Kong	May 8-Sept 3	22	20	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-July 30	8		
Dairen	May 2-July 3	10	5	
Fushun	May 15-Sept. 17	11		
Harbin	June 13-July 10	4		
Kaiyuan	July 3-9	2		
Mukden	May 22-July 30	6		
Pensihu	July 3-9	1		
Ssupingkai	May 8-July 9	3		
Tientsin	May 8-Sept. 10	18	4	
Chosen	Feb. 1-June 30			Cases, 507; deaths, 205.
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr. 1-30	1		
Curacao	May 29-June 4	1		Alastrim.
Ecuador:				
Guayaquil	June 1-Aug. 31	4		
Egypt	May 7-July 29			Cases, 21; deaths, 3
Alexandria	May 21-June 17	4	1	
Cairo	Jan. 22-Apr. 15	14	3	
France	Apr. 1-July 31			Cases, 201.
Lille	July 24-30	1		
Paris	May 21-July 31	14	2	
Gold Coast	Mar. 1-June 30.	41	7	
Great Britain:				
England and Wales	May 22-Oct. 8			Cases, 3,486.
Birmingham	Aug 14-Sept. 30	2		
Bradford	May 29-June 11	2		
Cardiff	June 19-July 2	4		
Leeds	July 17-Oct. 8	17		
Liverpool	July 17-30	1		
London	May 15-June 18	2		
Manchester	Oct 2-8	1		
Newcastle upon Tyne	June 12-Oct. 1	6		
Sheffield	June 12-Oct. 8	29		
Stoke-on-Trent	Aug. 21-27	1		
Scotland—				
Dundee	May 29-Sept 3	6		
Greece	June 1-30	14		
Salonika	July 12-Aug. 15		2	
Guatemala:				
Guatemala City	June 1-30		9	
Guinea (French)	June 4-10	9		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 4, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
India	Apr. 17-Sept. 3			Cases, 73,504; deaths, 19,402.
Bombay	May 28-Sept. 17	243	158	
Calcutta	May 8-Sept. 17	410	313	
Karachi	May 15-Aug. 6	10	5	
Madras	May 22-Sept. 24	31	8	
Rangoon	May 8-Sept. 17	186	156	
India, French Settlements in	Mar. 20-June 18	174	111	
Indo-China (French)	Mar. 21-Aug. 10			Cases, 318.
Saigon	May 14-Aug. 19	3	1	
Iraq:				
Baghdad	Apr. 10-Sept. 4	3	1	
Basra	Apr. 10-Sept. 17	5	4	
Italy	Apr. 10-May 21	13		
Rome	June 13-July 10	2		
Jamaica	May 29-Sept. 24	37		Reported as alastrim
Japan	Apr. 3-May 7			Cases, 19.
Nagasaki City	June 20-Aug. 14	28	7	
Taiwan Island	May 21-31	1		
Java:				
Batavia	May 22-Aug 20	7		
East Java and Madura	Apr 24-Aug 20	17		
Latvia	Apr 1-30	1		
Mexico	Mar 1-May 31			Deaths, 557.
Acapulco	Aug. 28-Sept. 17	2	2	
Durango	June 1-30		1	
Monterey	July 1-31	6	4	
San Luis Potosi	May 29-Aug 13		11	
Tampico	June 1-July 31	1	2	
Torreon	Aug. 7-Oct. 1		2	
Morocco	Apr. 1-July 31	207		
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in 2 localities.
Pasir Residency	Apr. 30-May 6			Epidemic outbreak.
Samarinda Residency	May 21-27			Do
Nigeria	Mar 1-June 30	2,352	570	
Paraguay:				
Asuncion	July 10-23		2	
Persia:				
Teheran	Feb. 21-July 23		16	
Poland	Apr. 10-Aug. 6	20	2	
Portugal				
Lisbon	May 29-Oct. 8	26	1	
Oporto	Sept. 3-9	1		
Senegal:				
Medina	July 4-10	7		
Siam	Apr. 1-Sept 3			Cases, 246; deaths, 66.
Bangkok	May 1-Sept. 10	16	8	
Spain.				
Madrid	Aug 1-31		1	
Valencia	May 29-June 4	3		
Do	Sept. 25-Oct. 1	1		
Straits Settlements	June 12-18			Cases, 3.
Singapore	Apr. 1-June 18	7	2	
Sumatra				
Medan	June 5-Aug. 20	3		
Switzerland				
Berne	June 26-July 2	1		
Syria.				
Damascus	Aug. 11-31	3		
Tunisia	Apr. 1-June 10			Cases, 10.
Tunis	June 1-10	1		
Union of South Africa:				
Cape Province	July 7-Aug. 20			Outbreaks.
Elliott district	May 11-June 10			Do.
Idutywa district	July 3-9			Do.
Kalanga district	May 11-June 10			Do.
Mount Ayliffe district	July 31-Aug. 6			Do.
Orange Free State	Aug. 7-13			Do.
Transvaal—				
Barberton district	May 1-7			Do.
Venezuela:				
Maracaibo	July 12-Sept. 12		3	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 4, 1927—Continued

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-July 20			Cases, 399; deaths, 39.
Algiers	May 11-Sept. 20	82		
Oran	May 21-Aug. 31	34		
Argentina:				
Rosario	Aug. 1-31		1	
Bulgaria	Mar 1-July 10			Cases, 226; deaths, 20.
Sofia	June 1-Sept. 30	10		
Chile:				
Antofagasta	Apr. 16-May 31	1		
Do	Sept 25-Oct. 1		1	
Concepcion	May 29-June 4		1	
La Calera	Apr. 16-May 31	1		
Ligua	Mar. 16-31	2		
Puerto Montt	Apr 16-May 31	1		
Santiago	do	5	1	
Talcahuano	July 10-16		1	
Valparaiso	Apr 16-Sept. 3	5	3	
China:				
Manchuria—				
Harbin	July 25-Aug. 21	5		
Mukden	May 29-June 4	1		
Tientsin	July 10-16	1		
Chosen	Feb. 1-June 30			Cases, 721; deaths, 60.
Chemulpo	May 1-Aug 31	3		
Gensan	do	4		
Seoul	Apr 1-Aug 31	35	3	
Czechoslovakia	do			Cases, 55
Egypt	May 28-Sept 2			Cases, 127; deaths, 19.
Alexandria	May 21-Aug 5	13	5	
Cairo	Jan 15-June 24	42	10	
Port Said	Sept. 24-30	1		
Estonia	Apr 1-June 30			Cases, 5
Greece	June 1-30	2		
Athens	June 1-July 31		9	
Guatemala:				
Guatemala	Aug. 25-31		1	
Iraq:				
Baghdad	Apr 24-30	1		
Irish Free State:				
Cork County	July 3-9	1		In urban district.
Latvia	Apr. 1-July 31	32		
Lithuania	Feb 1-July 31	347	42	
Mexico	Feb 2-May 31			Deaths, 140.
Mexico City	May 29-Sept. 24	59		Including municipalities in Federal district
San Luis Potosi	July 31-Aug 6		1	
Morocco	Apr. 1-Aug 20	952		
Palestine	May 21-Sept 26			Cases, 29
Haifa	May 24-Aug. 29	8		
Jaffa	Aug. 2-Oct 3	3		
Jerusalem	June 28-Aug 15	3		
Mahnaim	May 17-23	1		In Safad district.
Nazareth	July 19-25	1		
Safad	May 17-Aug. 8	10		
Peru:				
Arequipa	Apr 1-30		1	
Poland	Apr 10-Sept. 3	1,100	100	
Portugal:				
Lisbon	May 29-June 4	1		
Oporto	Aug 20-27	1		
Rumania	Apr. 3-July 23	956	64	
Spain:				
Seville	Aug. 19-25		2	
Syria:				
Aleppo	Sept 11-17	2		
Tunisia	Apr. 22-July 20			Cases, 158.
Tunis	July 5-Aug 21	2		
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa	Apr. 1-30			Cases, 55; deaths, 8, native. In Europeans, cases, 2.
Cape Province	Apr. 1-Aug. 27	42	5	
Albany district	June 5-11			Outbreaks.
East London	May 22-28	1		Do.
Glen Gray district	May 1-7			Do.
Kentani district	June 26-July 2			Do.
Port Elizabeth	Aug. 7-13	1		
Qumbu district	May 1-7			Do.
Umzimkulu district	June 26-July 2			Do

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 4, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Union of South Africa—Con.				
Natal	Apr. 1-Aug. 6	7	3	
Impendhle district	June 5-11			Outbreaks.
Orange Free State	Apr. 1-July 23	5		
Transvaal	Apr. 1-30	1		
Johannesburg	July 3-Aug. 20	19	5	
Yugoslavia	May 1-Aug. 31			Cases, 24; deaths, 5.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Ashanti:				
Obuasi	Aug. 6	1	1	
Dahomey (West Africa):				
Porto Novo	July 1	1	1	In Syrian woman.
Gold Coast	Apr. 1-June 30	60	22	
Do	Aug. 4	2		
Ivory Coast	July 29	1	1	
Liberia:				
Monrovia	May 29-July 8	4	5	
Senegal:				
Dakar	July 9	1		
Do	Aug. 8		2	
Do	Sept. 17			Presen
Geoul	Sept. 26-Oct. 2	1	1	
Island of Goree	Aug. 22-Sept. 4	2	2	
Khombole	Aug. 1-Oct. 2	4	1	
Louga	Sept. 26-Oct. 2	1	1	
M'Bour	May 27-June 19	5	5	
Ouakam	June 2-Aug. 14	4	2	
Pout	Sept. 19-25	1	1	
St. Louis	Aug. 1-Oct. 2	3	3	
Thies	July 10	1	1	In European.
Do	Sept. 12-Oct. 2	4	4	
Tiaroye	Aug. 22-Sept. 4	1	1	
Tivaouane	May 27-Sept. 11	6	5	
Togoland:				
Melatza	Aug. 15-21	1	1	

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TREASURY DEPARTMENT

PUBLIC HEALTH REPORTS

ISSUED WEEKLY

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NOVEMBER 18 - 1927

SPECIAL ARTICLES

Prevalence of Poliomyelitis in the United States
Report on Survey of Endemic Goiter in Oreg
The Public Health in England and Wales in

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UNITED STATES PUBLIC HEALTH SERVICE

HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

ASST. SURG. GEN. R. C. WILLIAMS, *Chief of Division*

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They contain: (1) Current information of the prevalence and geographic distribution of preventable diseases in the United States in so far as data are obtainable, and of cholera, plague, smallpox, typhus fever, yellow fever, and other communicable diseases throughout the world. (2) Articles relating to the cause, prevention, or control of disease. (3) Other pertinent information regarding sanitation and the conservation of the public health.

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CONTENTS

PUBLIC HEALTH REPORTS

VOL. 42 NOVEMBER 18, 1927 NO. 46

PREVALENCE OF POLIOMYELITIS IN THE UNITED STATES

The health officers of 41 States reported 390 cases of poliomyelitis for the week ended November 5, 1927, 439 cases for the preceding week, and 524 cases for the week ended October 22, 1927.

Comparing the reports for the week ended November 5, 1927, with the preceding week, slight increases for the later week appear for West Virginia, Ohio, Mississippi, Texas, Idaho, Washington, and California. Seven other States reported increases of one or two cases each. Massachusetts, New York, Illinois, Indiana, Michigan, and Oregon reported fewer cases for the later week. The total for the 41 States was 11 per cent lower for the week ended November 5 than for the week ended October 29, 1927.

Reports are available from 39 States for the weeks ended November 5, 1927, November 6, 1926, and November 7, 1925. These States reported for these weeks, 331 cases in 1927, 60 cases in 1926, and 111 cases in 1925.

A table showing the reports by States appears on pages 2852–53. Reports for the week ended November 12, 1927, are printed on page 2866.

ENDEMIC GOITER IN OREGON

By Robert Olesen, *Surgeon, United States Public Health Service*

GENERAL CONSIDERATIONS

For a number of years it has been known that endemic goiter prevails to a considerable extent in the State of Oregon. This knowledge, fostered by sporadic surveys, received further support when the results of the draft examinations were announced. These results, frequently referred to in the literature, indicate that endemic goiter is more frequently encountered in the Pacific Northwest than any other section of the United States.[1] According to the report giving the number of instances of endemic goiter and the ratio per 1,000 examinations, among 2,510,701 men examined for military service, Oregon, with a ratio of 26.31 per 1,000 examinations, ranked next to the highest of all the States in the amount o simple goiter. This official reference has caused it to become widely known that Oregon, in common with the other States comprising the Pacific Northwest

[1] Table 18, p. 111, of Defects Found in Drafted Men, by A. G. Love and C. B. Davenport, prepared under the direction of the Surgeon General, M. W. Ireland, War Department, Washington, D. C., 1920.

group, has more endemic goiter than any other section of the country. However, it must be recalled that this finding was based upon the detection of only 421 goiters among all of the drafted men in the State.

Because of Oregon's geographical position and the proximity of many of its cities to the ocean, much interest has been manifested as to the underlying cause for the unusually high incidence of endemic goiter. If, as is generally considered to be the case, endemic goiter, with minor exceptions, is least frequent along and near seacoasts, there should be relatively little endemic goiter in the western portion of Oregon. Desiring to learn more concerning the distribution of simple goiter within the State, as well as to compare the incidence of the malady in Oregon with that in other States, the State health officer requested that a suitable study be undertaken by the Public Health Service. Consequently, the investigation herein detailed was made in cooperation with the Oregon State Board of Health.[2]

Previous thyroid surveys.—The rates of thyroid incidence disclosed by the draft examinations constitute a leading contribution to the subject. It should be recalled, however, that these examinations were made by many physicians with varying degrees of skill and experience. Consequently, the results may not present an accurate picture of endemic thyroid enlargements among those most susceptible to the disease, particularly the adolescent girl.

TABLE 1.—*Incidence of endemic goiter in several localities in Oregon, as shown by available records*

Place	Number examined			Percentage with goiter			Reported by—	Remarks
	Boys	Girls	Boys and girls	Boys	Girls	Boys and girls		
Newport	620	1,047		10.8	26.1		W. C. Belt	1916.
Medford	844	832		16.2	44.9		L. D. Inskeep	
Portland	407	2,279		27.0	56.2		City Club's public-health section.	
Do				36.0	60.0		J. Earl Else and B. Peden.	
Do			4,057			8-40	H. A. Cary	31 schools; incidence varies according to school location and length of prophylaxis.
Do	408	361		44.6	50.1		do	1 school complete.
Douglas County			1,253			7.6	W. C. Belt	1925.
Do			1,583			8.6	do	1926 (north end of county).
Do			1,933			13.7	do	South end of county.

[2] The writer is under many obligations to Dr. Frederick D. Stricker, State health officer of Oregon, and to members of his staff for splendid practical assistance in arranging for thyroid surveys in various parts of the State. Especially noteworthy was the excellent cooperation afforded by the director of the division of child hygiene and public health nursing, Mrs. Glendora M. Blakely, through whose efforts the county, school, and special nurses lent particularly fine assistance. To the local health officers, school superintendents, principals, teachers, and others, whose courtesy, sympathy, and help made possible the various individual surveys, grateful acknowledgment is made. The willingness with which cooperation is given in the State in a study of this character makes Oregon an unusually fruitful field for public health investigations.

In addition to the draft figures dealing with goiter, a number of surveys have been made by independent observers. An attempt has been made to secure the results of the principal surveys, the findings being reproduced in Table 1.

It will be noted that one of the early surveys was made in 1916 by Dr. W. C. Belt, then an acting assistant surgeon of the Public Health Service. Doctor Belt at that time noted an incidence of 10.8 per cent of goitrous boys and 26.1 per cent of goitrous girls among those examined. Making a goiter survey in Douglas County in 1926, Doctor Belt noted a greater incidence of simple thyroid enlargement in the southern portion of the county.

Surveys in Portland have shown a rather high incidence of endemic goiter. Dr. Helen A. Cary, medical director of schools in Portland, has found that thyroid involvement varies in the different schools, being less in groups that have received prophylactic doses of iodine. Doctors Else and Peden found that endemic goiter prevailed among the boys of Portland to the extent of 30 per cent, and among the girls to 60 per cent. In another survey in Portland Doctor Else, serving as chairman of the City Club's public health section, announced an incidence of 27 per cent among 407 boys and 56.2 per cent among 2,279 girls. In Medford Doctor Inskeep noted that 16.2 per cent of the boys and 44.9 per cent of the girls had some degree of thyroid enlargement. Many other surveys have undoubtedly been made in the State, but only the few recorded appear to have found their way into the literature.

Epidemiological features of prophylaxis.—That the incidence of endemic goiter may be materially lowered by appropriate prophylactic measures has been amply demonstrated in several localities in Oregon. In Portland, for instance, there is less thyroid enlargement among the children who have received minute doses of iodine regularly than among those who, because of parental objection, have been denied this protection. In other places, too, beneficial effects have been noted after the regular application of prophylactic measures. From an epidemiological viewpoint the situation created by preventive measures has its interesting features. Manifestly, the dividing lines between regions of high and low goiter incidence may conceivably be radically altered by energetic procedures of this character. Thus, the natural incidence rates may be greatly lowered by prophylaxis. On the other hand, a community unfriendly or indifferent to the benefits of the measures may, by its inaction, cause a normally low rate to assume undue importance when compared with localities in which preventive measures are energetically applied. Consequently a state-wide goiter survey can only be approximately correct in indicating areas of incidence.

Scope of the study.—The present study in no way attempts to present the epidemiological phases of the endemic goiter problem in Oregon. The investigation had for its sole purpose the determination of the incidence of simple goiter in representative communities in the State. It is fully realized that an intensive and extended investigation of the subject is desirable, for many relevant data are lacking. At the same time such meager information as has become available is presented in this article with the hope that additional interest and study may be stimulated.

Methods.—In determining the presence and extent of thyroid enlargement among the children examined in Oregon, the methods described in previous service publications were employed.[3 4] The classification originally suggested during the Cincinnati survey in 1924 has been used on a sufficiently comprehensive scale in different sections of the country to insure its value. Moreover, since a number of surveys have been made under similar conditions by the same workers, comparable data have been gathered.

There are manifestly wide variations in the methods of determining thyroid enlargements. Moreover, the classifications of various degrees and types of involvement also range within wide limits. Obviously uniform procedure is a necessity if findings in different sections of the country are to be compared.

It is becoming more and more apparent that a great deal of confusion exists concerning the dividing line between a normal and an enlarged thyroid gland. In the many surveys that have been made in various sections of the United States, mistakes have undoubtedly been made. Some investigators have classified normal thyroids as goitrous, while the reverse error has been committed just as frequently. Inasmuch as the exact dividing line between the normal and enlarged thyroid is not known and no accurate means for its determination are available, reliance must be placed upon an arbitrary mode of demarcation.

The readily palpable thyroid gland.—During the Oregon survey it was noted that some physicians and nurses were prone to classify any gland that could be felt as a goiter. As the normal thyroid has weight and dimensions, it can readily be outlined in the vast majority of individuals examined.[5] The classification of a palpable thy-

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[3] Olesen, Robert: Thyroid survey of 47,493 elementary school children in Cincinnati. Pub. Health Rep., vol. 39, No. 30, pp. 1777-1802, July 23, 1924. (Reprint No. 941.)

[4] Olesen, Robert: Endemic goiter in Colorado Pub. Health Rep., vol. 40, No. 1, pp. 1-22, Jan. 2, 1925. (Reprint No. 983.)

[5] Commenting upon this statement, Dr. J. Earl Else, of Portland, Oreg., says, in a personal communication, "I am of the opinion that by the use of the method developed in this clinic we can palpate all thyroids except those with a retro-tracheal development. This method consists of standing behind the patient and placing the first 3 fingers of each hand over the thyroid region while the patient swallows. I regard the small palpable thyroid as normal when the lower pole is not blunt. A blunt lower pole either means a goiter present at the time of examination or the remains of a previous goiter. The retro-tracheal thyroid can usually be palpated by the procedure outlined by Lahey of Boston." (A method of palpating the lobes of the thyroid. By Frank H. Lahey, Jour. A. M. A., vol. 86, No. 12, p. 813, Mar. 20, 1926.)

roid as a goiter is believed to be an error which unfairly stigmatizes the community thus surveyed. However, in the interest of greater accuracy, a record was kept, during the Oregon survey, of the thyroid glands which, while readily palpable, were judged to be normal in character. In this connection it may be admitted that very slight thyroid involvement, regarded in this classification as a definite departure from normal, may be a physiological enlargement of transient character. Until more accurate knowledge concerning this point becomes available, it is desirable that the readily palpable gland be regarded as normal. However, in the present report the easily palpable yet presumably normal thyroids have been separately classified for the first time. Furthermore, a more nearly complete record of lumpy or nodular glands, presumably adenomatous in character, is available.

Sources of error in determining thyroid status.—It is rather surprising that the sterno-cleido-mastoid muscles, folds of adipose tissue, and even portions of the larynx should be mistaken for enlargement of the thyroid gland. Yet this error is perpetrated with sufficient frequency to exaggerate and unnecessarily confuse the records of thyroid surveys. Furthermore, mistakes of this character are not confined to lay people. Unfortunately, some physicians and nurses likewise commit such errors. The remedy, of course, lies in a better understanding of the topography of the thyroid gland, as well as some training, under a competent instructor, in the methods of examining the thyroid gland in its normal and abnormal states.

Scope of the survey.—Thyroid examinations were made in 32 of the largest cities and towns in Oregon. In all, 8,181 boys and 9,427 girls attending the public and parochial schools were examined. All examinations were made and the results recorded by a single observer. For the most part those examined attended the senior and junior high schools. Occasionally, when the enrollment in the high school was low, examinations were extended to the upper grades of the grammar schools.

Although the surveys were made in the largest cities and towns in the State, the findings are not indicative of urban conditions alone. Practically all of the schools, particularly the high schools, in cities outside of Portland have a large attendance of children from rural districts. Consequently, the survey is representative of conditions in both urban and rural sections.

RESULTS

Among the 8,181 boys examined, there were 1,826 thyroid enlargements of all degrees, or 22.3 per cent. The percentage incidence among the girls was, as usual, higher, 3,617 enlargements, or 38.3 per cent, being recorded among 9,427 girls. In Table 2 the numbers, degrees, and percentages of thyroid enlargements in each of the places visited are set forth.

Of the very slight thyroid enlargements, constituting a goodly majority of all degrees, there were 18 per cent among the boys and 23.5 per cent among the girls. Slight enlargements prevailed to the extent of 2.4 per cent among the boys and 9.7 per cent among the girls. Moderate enlargements predominated among the girls, 1.0 per cent being recorded, as against 0.086 per cent for the boys. No marked enlargements were found among the boys and only 3 were noted among the girls.

Adenomata.—Adenomatous goiters are especially interesting to the public health administrator, because of their potentialities for toxicity and malignancy in adulthood. Even more important is the possibility of preventing these adenomatous growths by appropriate prophylaxis during pregnancy. Apparently the discovery of lumps or nodules in the substance of the thyroid gland is largely dependent upon skill and experience in making examinations of the gland. Certainly the condition exists more frequently than is apparent from superficial examination. Among the boys examined in Oregon adenomatous goiters prevailed to the extent of 1.8 per cent, while among the girls the incidence was higher, 4.1 per cent.

TABLE 2.—*Numbers, degrees, and percentages of thyroid enlargements among 8,181 boys and 9,427 girls in each of 32 localities in Oregon*

Place	Boys							
	With thyroid enlargement						Normal	Total
	Degree of enlargement				Total	Per cent		
	Very slight	Slight	Moderate	Adenomatous				
Albany	58	8		5	71	23.7	229	300
Ashland	32	5		3	40	20.9	155	195
Astoria	32	2		5	39	18.0	177	216
Baker	62	11		3	76	26.8	207	283
Bend	114	22		4	140	23.6	452	592
Corvallis	30	3			33	11.9	245	278
Cottage Grove	40	9	1	5	55	31.3	121	176
Dallas	38	8		4	50	21.5	183	233
Eugene	20	3		2	25	11.7	188	213
Forest Grove	50	6		3	59	33.3	118	177
Grants Pass	45	12		9	66	26.1	187	253
Hillsboro	64	14	1	13	92	28.7	229	321
Hood River	43	2	1	3	49	33.6	97	146
Klamath Falls	21	1		2	24	13.9	149	173
La Grande	79	9		2	90	24.0	284	374
Marshfield	23	4			27	11.7	203	230
Medford	44	4		7	55	25.1	164	219
McMinnville	34	2		2	38	18.2	171	209
Newberg	58	4	1	3	66	29.9	155	221
North Bend	21	4		2	27	10.3	234	261
Ontario	22	1		1	24	11.7	188	212
Oregon City	57	16	1	6	80	26.3	224	304
Pendleton	42	4	2	3	51	23.9	162	213
Portland	164	10		27	201	24.9	606	807
Ranier	25	3		4	32	20.4	125	157
Roseburg	50	11		9	70	24.3	218	288
Salem	28	4		3	35	20.7	134	169
Seaside	20	1		4	25	17.2	120	145
Silverton	65	4			69	22.5	237	306
St. Helens	23	2		4	29	15.2	161	190
The Dalles	68	10		9	87	27.2	233	320
Total	1,472	199	7	147	1,825	22.3	6,356	8,181
Per cent	18.0	2.4	0.086	1.8		22.3		

Table 2.—*Numbers, degrees, and percentages of thyroid enlargements among 8,181 boys and 9,427 girls in each of 32 localities in Oregon*—Continued

Place	Girls								
	With thyroid enlargement							Normal	Total
	Degree of enlargement					Total	Per cent		
	Very slight	Slight	Moderate	Marked	Adenomatous				
Albany	90	43	11		12	156	44.0	199	355
Ashland	65	36	5		7	113	38.1	176	289
Astoria	77	30	2		9	118	37.8	194	312
Baker	90	44	5		10	149	46.0	171	320
Bend	138	48	1	1	16	204	34.5	387	591
Corvallis	65	34	4		14	117	38.2	189	306
Cottage Grove	51	40	3		12	106	51.2	101	207
Dallas	58	16	2		10	86	36.7	148	234
Eugene	67	14	1		10	92	30.6	208	300
Forest Grove	68	31			3	102	47.0	115	217
Grants Pass	66	46	6	1	9	128	48.6	135	263
Hillsboro	75	37	8		17	137	42.7	184	321
Hood River	59	33	2		7	101	48.8	106	207
Klamath Falls	40	12			13	65	39.4	100	165
La Grande	107	34	2		14	157	39.7	238	395
Marshfield	51	16	1		2	70	27.6	183	253
Medford	55	38	3		11	107	40.8	155	262
McMinnville	41	9	5		11	66	37.1	112	178
Newberg	75	35	2		9	121	43.4	158	279
North Bend	52	8			9	69	21.9	246	315
Ontario	18	7			2	27	12.7	184	211
Oregon City	101	42	6		21	170	52.3	155	325
Oswego	29	9	1		6	45	34.6	78	123
Pendleton	58	18			5	81	36.0	144	225
Portland	179	57	5	1	76	318	32.4	665	983
Ranier	55	22	5		10	92	44.4	115	207
Roseburg	64	25	3		15	107	39.2	166	273
Salem	71	35	2		2	110	49.8	111	221
Seaside	32	11			5	48	31.0	107	155
Silverton	98	30	1		3	132	30.6	229	361
St. Helens	59	18	4		11	92	37.8	151	243
The Dalles	70	40	4		17	131	39.6	200	331
Total	2,224	918	94	3	378	3,617	38.3	5,810	9,427
Per cent	23.5	9.7	1.0	0.032	4.1		38.3		

Low goiter rates.—The lowest incidence rates were recorded among the boys living in North Bend, Marshfield, Eugene, and Ontario. In explanation of these findings it may be pointed out that North Bend and Marshfield are on the coast, where endemic goiter may be expected to be less frequently encountered. In Eugene, prophylactic measures have been in operation for several years, apparently with success. Ontario, however, is located in the extreme central western portion of the State, near the Idaho boundary line. Physicians practicing in Vale, near Ontario, report a similarly low goiter incidence.

The lowest incidence rates among the girls were found in Ontario, North Bend, Marshfield, and Eugene, in the order named, the percentages being 12.7, 21.9, 27.6, and 30.6, respectively. Seaside, on the Pacific coast, also had a comparatively low goiter rate, 31 per cent.

High goiter rates.—The highest prevalence rates were recorded among the boys attending schools in Hood River, Forest Grove,

Cottage Grove, and Newberg, the percentages being 33.6, 33.3, 31.3, and 29.9, respectively. Among the girls, endemic thyroid enlargement was more frequent in Oregon City, Cottage Grove, Salem, Hood River, Grants Pass, and Forest Grove, in the order named. In the majority of the places surveyed in the State, the incidence rates of both sexes combined ranged between 30 and 40 per cent.

Endemic goiter and proximity to the ocean.—In reporting the results of a thyroid survey in Massachusetts, it was pointed out that endemic goiter was least frequent on Cape Cod and the eastern portion of the State.[6] As the western section of the State was approached, a gradual increase in the amount of endemic goiter was noted. It was concluded that proximity to the ocean, affording as it does a more plentiful supply of iodine in food, water, and possibly air, apparently aids in preventing simple thyroid enlargement. Moreover, it was considered possible that similar conditions might obtain in other similarly located places in the United States.

An examination of Table 3, in which are set forth the percentages of simple thyroid enlargement in the principal cities and towns of Oregon, shows that the disease is present to a considerable extent, not only in many places situated within 100 miles of the ocean, but also in seacoast communities. The principal data contained in Table 3 are shown graphically in the map. It will be noted that the principal cities are located in the western and northern sections of the State, the eastern, southern, and central portions being very sparsely populated. By means of symbols the percentage incidence of endemic goiter in each of the places surveyed has been indicated on the map. It will be seen that towns on the coast, such as Marshfield, North Bend, and Seaside, have less goiter than inland communities. Astoria, practically a seaport, likewise has comparatively little goiter. However, there is a marked difference in the goiter incidence encountered in Cape Cod (Mass.) towns, where the disease is infrequent, and Oregon seacoast towns where, relatively speaking, there is considerable endemic thyroid enlargement.[7] [8]

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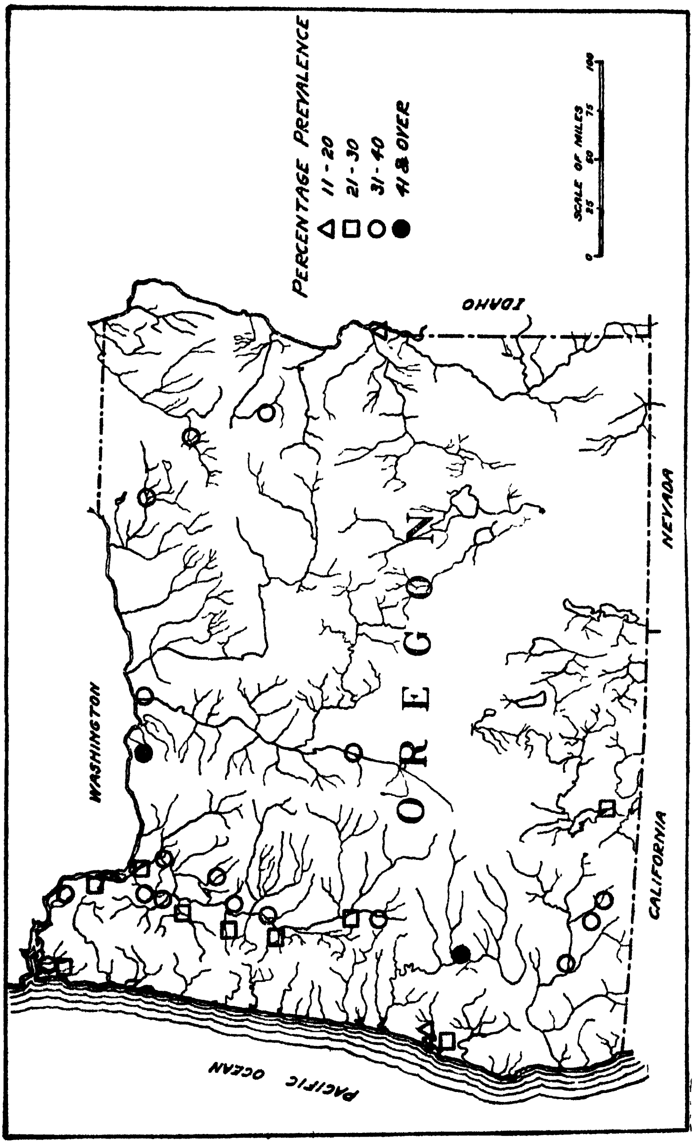
[6] Olesen, Robert, and Taylor, N E · Endemic thyroid enlargement in Massachusetts, Pub. Health Rep., vol. 42, No. 12, pp. 804-816, March 25, 1927. (Reprint No. 1158.)

[7] With reference to this observation Dr. David Marine, consultant in goiter studies, United States Public Health Service, says, in a personal communication "The occurrence of rather a high incidence of goiter along the Pacific seacoast, as in many places along the Mediterranean coast and in Norway, may still be due to a low iodine content of the water. While, undoubtedly, some iodine is ingested from the air and a great deal can be ingested from sea food, I feel certain that the main source of iodine is water. If this comes from soil recently glaciated or of volcanic origin or thoroughly leached by heavy rains, the important source of iodine might be reduced."

[8] On the same point Dr. J. Earl Else, of Portland, Oreg., says in a personal communication: "Referring to the different incidence on Cape Cod and in the coast towns of Oregon, it has been my understanding that the inhabitants of Cape Cod are practically all fisher folks and depend upon fish as one of the chief articles of diet, while the majority of the people along the Oregon coast not only have no relationship to fishing, but, owing to the commonness of sea food, eat perhaps less than those living farther inland. A survey of the families of the fishermen living in Astoria in comparison with the other people of Astoria would be interesting."



Percentage distribution of thyroid enlargement in Oregon as disclosed by a survey of 8,181 boys and 9,427 girls in 32 localities

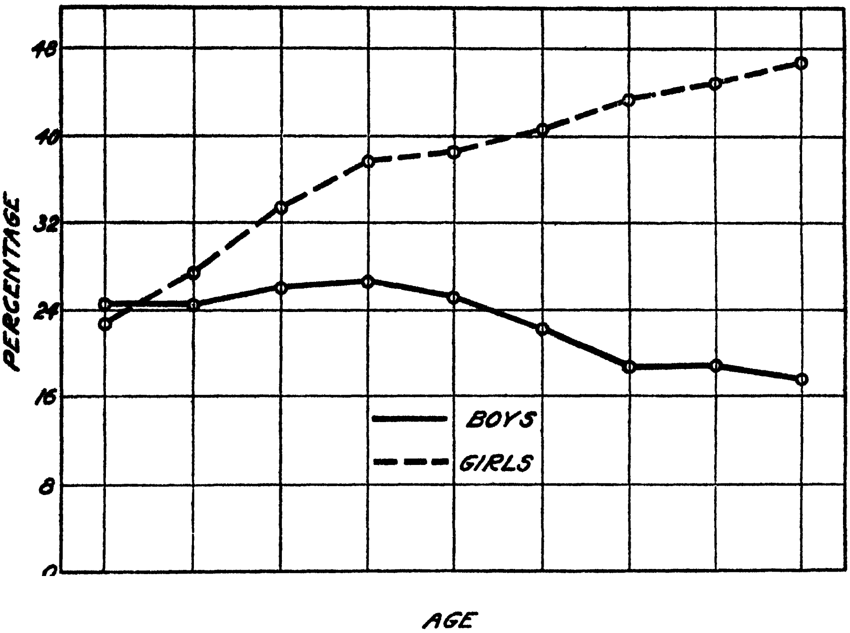
TABLE 3.—*Total numbers and percentages of thyroid enlargement among 8,18 boys and 9,427 girls, and both sexes combined, in each of 32 places in Oregon*

Locality	Per cent			Number		
	Both sexes	Boys	Girls	Both sexes	Boys	Girls
All localities	30 9	22.3	38.3	5,442	1,825	3,61
Albany	34.6	23.7	44 0	227	71	15
Ashland	31.6	20 9	38.1	153	40	11
Astoria	29.7	18 0	37.8	157	39	11
Baker	37.3	26.8	46.6	225	76	14
Bend	31.6	23.6	34 5	344	140	20
Corvallis	25.7	11.9	38.2	150	33	11
Cottage Grove	42.0	31.3	51.2	161	55	10
Dallas	29.1	21.5	36.7	136	50	8
Eugene	22 8	11.7	30.6	117	25	9
Forest Grove	40.8	33.3	47.0	161	59	10
Grants Pass	37.6	26.1	48 6	194	66	12
Hillsboro	35.7	28 7	42.7	229	92	13
Hood River	42 5	33 6	48 8	150	49	10
Klamath Falls	26 3	13 9	39.4	89	24	6
La Grande	32 1	24 0	39.7	247	90	15
Marshfield	20.1	11.7	27.6	97	27	7
Medford	33.7	25.1	40.8	162	55	10
McMinnville	26.8	18 2	37.1	104	38	6
Newberg	37.4	29 9	43 4	187	66	12
North Bend	16.7	10.3	21.9	96	27	6
Ontario	12 1	11.7	12 7	51	24	2
Oregon City	39.7	26.3	52.3	250	80	17
Oswego	30.6	----------	36.6	45	----------	4
Pendleton	30 3	23 9	36.0	132	51	81
Portland	29 0	24.9	32 4	519	201	31
Ranier	34.0	20.4	44 4	124	32	9
Roseburg	31.5	24 3	39 2	177	70	107
Salem	37.1	20.7	49 8	145	35	11
Seaside	24 3	17.2	31 0	73	25	4
Silverton	30.1	22 5	36.6	201	60	132
St. Helens	27 9	15 2	37 8	121	29	92
The Dalles	33.5	27 2	39 6	218	87	131

It is difficult to explain why conditions should vary so widely in two similarly situated States. It has been suggested that many of the children examined in coast towns were newcomers, the goitrous conditions having existed prior to their coming to that locality. Investigation showed, however, that there was no distinction in goitrous conditions between the native born and recent residents. In the course of questioning it was learned that many native coast residents do not partake of sea food, certainly not to the extent that inland dwellers do. In view of the Oregon findings it may be concluded that there are exceptions to the general rule that simple goiter is comparatively infrequent along the seacoast. Furthermore, the malady is not necessarily more frequent in the interior of continents. Most interesting is the low goiter incidence in the extreme eastern portion of Oregon.

Age incidence of goiter in Oregon.—In Table 4 are shown the percentages of thyroid enlargements at each age between 8 and 20. The data for the ages 10 to 18 are shown graphically in the Chart. It will be noted that there is a gradual increase in the incidence of

goiter among boys from the age of 10 years until the peak is reached at 13 years. Thereafter, there is a steady decline in the incidence of the disease as the higher ages are reached. Among the girls, how-



Percentages of all grades of thyroid enlargement among 7,498 boys and 8,798 girls, by ages, in 32 localities in Oregon

ever, there is a steady increase in goiter incidence from the age of 10 to 18 years. Goiter, of course, prevails to the customarily greater extent among girls.

TABLE 4.—*Numbers and degrees of thyroid enlargements among 8,181 boys and 9,427 girls (by ages) in 32 places in Oregon*

Age	Boys								
	With enlarged thyroids						Palpable	Normal	Total
	Degree of enlargement				Total	Per cent			
	Very slight	Slight	Moderate	Adenomatous					
8	10	2	--------	2	14	13.6	29	60	103
9	40	--------	--------	4	44	18.0	88	112	244
10	81	7	--------	8	96	24.5	134	161	391
11	110	10	--------	7	127	24.6	189	200	516
12	174	22	--------	18	214	26.0	269	341	824
13	213	37	--------	13	263	26.8	333	384	980
14	236	34	1	22	293	25.1	355	517	1,165
15	211	33	--------	19	263	22.1	319	608	1,190
16	163	17	2	19	203	18.7	275	606	1,084
17	118	18	3	18	157	18.9	189	490	836
18	73	8	1	8	90	17.6	120	302	512
19	20	7	--------	5	41	17.7	58	132	231
20 and over	12	4	--------	4	20	19.0	15	70	105
Total	1,472	199	7	147	1,825	22.3	2,373	3,983	8,181
Per cent	18.0	2.4	0.086	1.8	--------	22.3	29.0	48.8	100.0

TABLE 4.—*Numbers and degrees of thyroid enlargements among 8,181 boys and 9,427 girls (by ages) in 32 places in Oregon*—Continued

Age	Girls									
	With enlarged thyroids							Palpable	Normal	Total
	Degree of enlargement					Total	Per cent			
	Very slight	Slight	Moderate	Marked	Adenomatous					
8	17	1			4	22	17.7	38	64	124
9	42	5			7	54	19.5	98	125	277
10	87	10			10	107	22.8	161	202	470
11	121	23			13	157	27.6	187	225	569
12	195	65	2		32	294	33.4	277	309	880
13	275	95	7	1	52	430	37.7	352	361	1,143
14	323	144	17	1	63	548	38.5	386	411	1,345
15	348	151	14	1	55	569	40.8	371	454	1,394
16	355	171	19		57	602	43.4	376	408	1,386
17	261	140	23		50	474	45.0	248	331	1,053
18	148	82	8		24	262	47.0	147	149	558
19	43	22	3		10	78	46.7	43	46	167
20 and over	9	9	1		1	20	32.8	17	24	61
Total	2,224	918	94	3	378	3,617	38.3	2,701	3,109	9,427
Per cent	23.6	9.7	1.0	0.032	4.0		38.3	28.7	32.9	100.0

Influence of place of birth upon incidence of endemic goiter.—It is probable that endemic goiter is a disease of environment and that neither heredity nor previous place of residence have any considerable bearing upon thyroid status. This contention appears to be borne out by the results of the inquiry concerning the birthplaces of the children examined in Oregon. In Table 5 the birthplaces of the thyroid-normal and thyroid-enlarged children have been arranged according to certain geographical subdivisions.

The data presented in this table indicate that the percentages of thyroid-normal and also thyroid-enlarged individuals from different sections of the country have a striking similarity. This suggests, at least, that the children in a given place in Oregon are free from or susceptible to endemic goiter, irrespective of their places of birth. Children from nongoitrous regions apparently develop goiter when removed to a place in which the malady is endemic. However, the time element and other factors remain to be determined. The question may be considered an open one, with need for extended observations of precise nature before a conclusion is reached.

TABLE 5.—*Number and percentage of thyroid-normal and thyroid-enlarged children according to birthplaces, among 8,071 boys and 9,299 girls examined in Oregon*

BOYS

	Place of birth							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	Total
Total number in group	2,472	2,401	1,176	1,050	579	115	278	8,071
Number thyroid normal	1,930	1,892	909	835	462	88	211	6,327
Number thyroid enlarged	542	509	267	215	117	27	67	1,744
Per cent normal	78.1	78.7	77.3	79.5	79.8	76.5	75.8	78.4
Per cent enlarged	21.9	21.3	22.7	20.5	20.2	23.5	24.2	21.6

GIRLS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	Total
Total number in group	2,833	2,811	1,334	1,135	708	144	334	9,299
Number thyroid normal	1,766	1,741	859	691	461	88	232	5,838
Number thyroid enlarged	1,067	1,070	475	444	247	56	102	3,461
Per cent normal	62.3	62.0	64.5	60.9	65.1	61.3	69.5	62.8
Per cent enlarged	37.7	38.0	35.5	39.1	34.9	38.7	30.5	37.2

Explanation:
(1) Born in town in which examination was made.
(2) Born in Oregon (outside of town in which examination was made).
(3) Born in area of greatest endemic goiter incidence, according to results of draft examinations (Idaho, Washington, Montana, Utah, and Wyoming).
(4) Born in area of moderate goiter incidence (Wisconsin, Michigan, North Dakota, Minnesota, West Virginia, Illinois, Iowa, Indiana, Nevada, Ohio, Colorado, and California).
(5) Born in area of slight goiter incidence (Pennsylvania, South Dakota, Virginia, Nebraska, Vermont, North Carolina, Kentucky, District of Columbia, Kansas, Arizona, New York, Missouri, South Carolina, Maine, Arkansas, Louisiana, and Oklahoma).
(6) Born in area of least goiter incidence (Maryland, New Mexico, New Hampshire, Mississippi, Delaware, Alabama, Rhode Island, Georgia, New Jersey, Massachusetts, Texas, Florida, Connecticut, and Tennessee)
(7) Born outside continental United States (Canada, Mexico, Philippines, etc.).

Relationship between endemic goiter and drinking water in Oregon.—Comprehensive determinations of iodine in Oregon water supplies are lacking. However, the few available analyses indicate a paucity of iodine in the water. McClendon reports 0.03 and 0.10 parts of iodine per billion parts of Bull Run water, with which Portland is supplied.[9] In a sample of water from the Clackamas River, glacial in origin, 0.06 parts of iodine per billion were found. It is interesting to note in this connection that the greatest amount of endemic goiter among girls was found in Oregon City, which uses the untreated water from the Clackamas River.

A sample of water from Marshfield, Oreg., examined by Dr. J. F. McClendon, of the University of Minnesota, since the thyroid survey was completed, failed to disclose the presence of iodine. The paucity of iodine in the drinking water or Oregon can be better appreciated when a comparison is made with the iodine content of waters in other sections of the country. Thus, the water of New York City has 2.50 parts of iodine per billion, while that of Stanford, Calif., has 105.80 parts per billion.

[9] McClendon, J. F., and Hathaway, J. C.: Inverse relation between iodine in food and drink and goiter, simple and exophthalmic. Jour. A. M. A., vol. 82, No. 21, p. 1668, May 24, 1924.

Although the inverse relation between goiter incidence and iodine content of water, as suggested by McClendon, appears to hold true in general, there are numerous exceptions to the general rule. One of these, the absence of iodine from the water used for drinking purposes in Provincetown, Mass., where goiter is almost nonexistent, has been indicated in a previous publication.[10] In this instance, of course, requisite iodine is undoubtedly ingested in sea food.

In Oregon a deficiency in iodine in both water and food is probably responsible in a large degree for the considerable incidence of simple goiter. Determinations of iodine in Oregon fruits and vegetables by McClendon have disclosed unusually small quantities of iodine.

Goiter and polluted water.—Inasmuch as McCarrison has recently reiterated his conviction that endemic goiter is due to the consumption of polluted water, the direct causative agent being an unidentified living organism, it is of interest to institute an inquiry concerning the safety of water supplies in Oregon.[11] Marine and Kimball, discussing this point, contend that "if water is a factor, it would seem that it is the absence rather than the presence of some substance which is to be considered, since goiter is associated with the purest of waters, chemically and bacteriologically, as, for example, in Portland, Oreg., and in Seattle and Tacoma, Wash., where there has been a rapid increase in goiter since these cities began to take their water supplies from the Cascade Mountains." [12]

The source and treatment of the water supplies of the cities and towns in which thyroid examinations were made are shown in Table 6. This information was supplied by the State board of health. It is evident from this table that practically all of these water supplies are safe for human consumption. In fact, many of the supplies, coming from uninhabited mountain water sheds, would appear to be safe without treatment. However, in order to provide an additional factor of safety, some of the supplies are filtered and chlorinated. It does not appear that any of the waters listed are polluted or unsafe. Neither is there evidence, with the exception of the Oregon City supply, that endemic goiter is more frequent in places in which no water treatment is instituted. Under the circumstances McCarrison's belief that this form of goiter is due to the consumption of polluted water can not be substantiated in Oregon.

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[10] See footnote 6, p. 2838.

[11] McCarrison, Robert: An experiment in goiter prevention. British Med. Jour., Jan. 15, 1927, p. 94. Abstract in Public Health Reports, vol. 42, No. 12, Mar. 25, 1927.

[12] Marine, David, and Kimball, O. P.: The prevention of simple goiter in man. Jour. A. M. A., vol. 77, No. 14, pp. 1068-1070, Oct. 1, 1921.

TABLE 6.—*Sources and treatment of certain public water supplies in Oregon*

Place	Source of water supply	Treatment
Albany	Santiam River	Filtration and chlorination.
Ashland	Ashland Creek	Chlorination.
Astoria	Creek	None.
Baker	Mountain stream	Chlorination.
Bend	Deschutes River	Chlorination occasionally during rainy season.
Canby	Well	Chlorination.
Corvallis	Creek	Do.
Cottage Grove	Creeks	Do.
Dallas	Creek	None.
Eugene	Willamette River	Filtration and chlorination.
Forest Grove	Mountain stream	None.
Grants Pass	Rogue River	Chlorination.
Hillsboro	Sain Creek	None.
Hood River	Springs	
Klamath Falls	Wells	Chlorination.
La Grande	Mountain stream	Do.
Marshfield	Creek	Do.
McMinnville	Mountain creek	Do.
Medford	Fish Lake	Do.
Newberg	Small creek	None.
North Bend	Mountain creek	Chemical coagulation, filtration, and chlorination.
Ontario	Snake River	Filtration and chlorination.
Oregon City	Clackamas River	None.
Oswego	Bull Run Water	Same as city of Portland.
Pendleton	Springs	Chlorination.
Portland	Bull Run Lake	None.
Rainier	Small creek	Do.
Roseburg	Umpqua River	Chlorination.
Salem	Willamette River	Filtration and chlorination.
Seaside	Small mountain creek	None
Silverton	Silver Creek	Chlorination.
St. Helens	Creek	Do.
The Dalles	do	Do.

Comparative goiter incidence in six States and one city.—Representatives of the Public Health Service have made extensive goiter surveys in the States of Minnestoa, Oregon, Colorado, Montana, Connecticut, and Massachusetts and in the city of Cincinnati. These surveys have included 55,179 boys and 70,307 girls in 192 localities. Five of the seven surveys were made by the same examiners, enabling comparisons which serve to indicate differences in general prevalence, degrees of enlargement, and geographical distribution. A comparative study of the data gathered during these surveys will be presented in a later article. The material secured to date shows that endemic goiter is most frequent in Minnesota and least frequent in Connecticut and Massachusetts, the other States and the one city occupying intermediate positions. Comparatively, the incidence of endemic goiter in Oregon, taken as a whole, is approximately the same as that in the city of Cincinnati.

SUMMARY

1. The thyroid survey in Oregon included 8,181 boys and 9,427 girls attending the senior and junior high schools and upper grades of the grammar schools in 32 localities.

2. A total of 5,443 thyroid enlargements, a percentage of 30.9, was noted among the 17,608 children examined.

3. Thyroid enlargements of all degrees prevailed among the boys to the extent of 22.3 per cent and among the girls to the extent of 38.3 per cent.

4. Among the 8,181 boys examined, 48.8 per cent of the thyroids were classified as normal, 29 per cent as palpable, and presumably normal, 18 per cent as very slightly enlarged, 2.4 per cent as slightly enlarged, and 1.8 per cent as adenomatous. There were also 7 moderate enlargements, a percentage of 0.086.

5. Among the 9,427 girls examined, 32.9 per cent of the thyroids were regarded as normal, 28.7 per cent as readily palpable and normal, 23.6 per cent as very slightly enlarged, 9.7 per cent as slightly enlarged, 1 per cent as moderately enlarged, and 4 per cent as adenomatous in character. There were only three marked enlargements, a percentage of 0.032.

6. The observation previously made that thyroid enlargements decrease in number as boys increase in age, while among the girls the involvements continue to increase in number up to the age of 18, was again sustained by the Oregon survey.

7. Endemic goiter is present to a considerable extent in the seacoast towns of Oregon, mere proximity to the ocean apparently failing to confer the relative freedom from the disease which prevails on Cape Cod, Mass. At the same time there is much less goiter in the seacoast towns in Oregon than in the cities and towns farther inland.

8. A district of low goiter incidence prevails in the central-eastern section of the State, around Ontario and Vale.

9. The places of birth and the places of previous residence are factors which do not appear to enter into the question of thyroid status among the children of a given community in Oregon.

10. There appears to be no relationship between the amount of goiter in a given community in Oregon and the treatment of the public water supplies by filtration and chlorination.

11. Endemic goiter prevails to a considerable extent in most portions of the State of Oregon. There is much less goiter in Oregon than in Minnesota, approximately the same amount as in Cincinnati, and much more than in Connecticut and Massachusetts.

12. It is probable that iodine prophylaxis has materially altered the usual incidence of goiter in many localities. It may no longer be possible to determine natural goiter rates.

SUGGESTIONS

It is impracticable to suggest a plan for dealing with the endemic goiter problem that will be universally applicable. Each community must decide how the local indications may best be met. An agreement as to the method to be employed is obviously essential.

Thus, the public health officials, medical society, school board, and representatives of the general public should be in agreement as to the procedure to be instituted. Moreover, goiter prophylaxis should come at the request of the intelligent citizenry, following preliminary educational measures, rather than be thrust upon the people without adequate explanation.

The following measures appear to be warranted by the findings in Oregon and consequently are recommended for adoption:

1. Physicians should be encouraged, through suitable educational measures, to apply prophylaxis during pregnancy and lactation, using the plan advocated by Marine.[13]

2. By means of a survey, made in conjunction with the annual physical examinations in the schools, the children should be divided into two groups, one containing the thyroid-normal and the other the thyroid-enlarged individuals.

3. Children with thyroid enlargements should be referred to physicians skilled in treating such conditions or special arrangements should be made for free treatment by physicians selected by competent authorities.[14]

4. Thyroid-normal children should receive individual oral prophylaxis, preferably in connection with the medical inspection system in the schools.

COMMENT

Goiter prophylaxis may be specific or general. Each method has its merits as well as its shortcomings. Individual oral prophylaxis is undoubtedly the preferable procedure, for nominal supervision and accurate dosage are assured. However, experience has shown that unless the recipients of individualized doses of iodine are carefully and constantly followed, the necessary medication will not be ingested with essential regularity.

It is obvious that, until some general automatic method is devised for supplying the minute doses of iodine needed as a goiter prophylactic, the success of the movement will be interfered with to a marked degree. This knowledge has been responsible for attempts to make iodine universally available in water and table salt, the two most widely used foods. The iodization of drinking water for the prevention of simple goiter appears to be a theoretically correct procedure. However, proof of the efficiency and harmlessness of this measure is lacking. Iodized table salt, a prophylactic of distinct

[13] Marine, David: The importance of our knowledge of thyroid physiology in the control of thyroid diseases. Arch. of Int. Med., vol. 32, No. 6, p. 811, December, 1923.

[14] Dr. H. S. Plummer, consultant in goiter studies, United States Public Health Service, commenting in a personal communication, upon this recommendation, expresses the opinion that prophylaxis would probably meet the requirements of a large percentage of the thyroid enlargements noted during the Oregon survey.

promise, is under a cloud of suspicion at the present time because of alleged harmful effects exerted upon hypersusceptible individuals. While some of these reports are undoubtedly authentic, it is believed that the incidence of endemic goiter has been reduced in an encouraging degree in some localities by the general use of iodized table salt. It can only be hoped that the iodine content of salt can be so adjusted as to be efficient in preventing simple goiter and, at the same time, be incapable of exciting a diseased gland to hyperfunction. Until such a scientific readjustment of the iodine content has been made it may be best not to advocate the widespread use of artificially iodized table salt. Persons with goiters should certainly be cautioned against the use of iodized salt, for it is inconceivable that existing thyroid enlargements will be benefited by the ingestion of this commodity. On the other hand, it is likely that some forms of goiter may be made worse by the unrestricted use of iodized salt.

There is urgent need for restating the principles upon which goiter prophylaxis rests. Marine has repeatedly stressed the need for making a distinction between goiter due to absolute and relative deficiencies of iodine. The absolute deficiency of iodine is due to a shortage or absence of this essential element in soil, food, and water. On the other hand, a goiter due to a relative deficiency of iodine is caused by various infections and intoxications, by puberty, pregnancy, and lactation, and by partaking of abnormal food combinations. Furthermore, the essentials of successful goiter prophylaxis, namely, efficiency, harmlessness, palatability, minute dosage, low cost, and ease of administration of the iodine preparation employed, should be clearly understood.

Obviously it is desirable, though difficult, to establish a satisfactory line of demarcation between prophylaxis and treatment on the basis of thyroid size. Prophylaxis, of course, concerns the maintenance of normal thyroid equilibrium, while treatment aims to restore an enlarged gland to normal or alleviate the symptoms arising from thyroid disease. Normal and readily palpable thyroids classed as normal undoubtedly furnish the ideal conditions for prophylaxis. Whether the very slight thyroid enlargements, believed by the writer to constitute a departure from normal, though possibly physiological in character, would respond to routine prophylaxis, is open to question.

The expectation that the minute quantity of iodine capable of maintaining normal thyroid equilibrium will likewise reduce existing enlargements has caused much disappointment, dissatisfaction, and even condemnation of prophylactic procedure. If prophylaxis is to occupy its rightful position, the limitations of the measure must be better and more generally understood. While very slight thyroid enlargements may at times be reduced to normal by iodine in prophy-

lactic doses, it is believed to be more satisfactory to individualize in the treatment of this as well as the more marked degrees of enlargement. Finally, it may be noted that the treatment of goiter, being frequently disappointing in its results, is not lightly to be undertaken by the inexperienced and unskilled.

PUBLIC HEALTH IN ENGLAND AND WALES, 1926

In his annual report to the Minister of Health, Sir George Newman, chief medical adviser, stresses the importance of the sanitary duties of the local authorities in the nation's welfare and enumerates seven important public-health services which have contributed to the excellent health conditions in England, viz, notification, maternity and child welfare, school medical services, national health insurance, poor-law medical services, factory acts, and special campaigns against such diseases as smallpox, tuberculosis, venereal diseases, and mental diseases. "In spite of an enormous increase of population," he says, "without increase of home territory, the total death rate and infant mortality of the nation have been halved inside four generations. The mortality of childhood is one-third of what it was 80 years ago, and the expectation of life to-day is 17 years longer than in 1876."

The indirect consequences of the war are shown in the decrease in the proportion of males aged 20–40 from 155 per 1,000 in 1911 to 141 in 1921. The birth rate for 1926 was 17.8, the lowest on record, but this is compensated for in part by a low infant mortality, 70 per 1,000 live births in 1926.

The death rate in 1926 was 11.6 per 1,000 population, representing 19,037 fewer deaths than in 1925. Increase in the mortality from diphtheria, cancer, and diseases of the heart was more than counterbalanced by the decline in deaths from influenza, pneumonia, bronchitis, and diseases of infancy. All classes suffered severely from whooping cough; and the incidence of diphtheria, poliomyelitis, and smallpox increased.

In England and Wales (population, 39,067,000) during 1926, among insured persons alone, a total of 28,250,000 weeks' work (equivalent to 12 months' work of over 540,000 people) was lost through sickness.

In regard to accuracy of statements of causes of death the chief medical adviser considers that it is hardly too much to say that the fabric of the art and practice of preventive medicine is founded upon the accuracy of the registration of the causes of death. He says that "unless and until a nation has adopted a sound system of vital statistics, 'the bookkeeping of humanity,' which is both uniform and universal, there can be no evaluation of assets and liabilities."

The following table shows the number of deaths and proportion per 1,000 deaths, from principal causes, in England and Wales in 1926:

Number of deaths from principal causes and proportion per 1,000 deaths from all causes in England and Wales, 1926

Cause of death	1926	
	Number of deaths	Proportion per 1,000 deaths from all causes
Measles	3,483	8
Whooping cough	4,118	9
Diphtheria	2,994	7
Influenza	8,936	20
Tuberculosis of respiratory system	30,108	66
Other forms of tuberculosis	7,417	16
Cancer (malignant)	53,220	117
Diseases of the nervous system and sense organs	46,569	103
Diseases of the heart	64,465	142
Other diseases of the circulatory system	20,739	46
Bronchitis	30,187	67
Pneumonia (all forms)	32,339	71
Other diseases of the respiratory system	5,303	12
Diarrhea and enteritis	8,415	19
Other diseases of the digestive system	19,234	42
Nonvenereal diseases of the genito-urinary system	19,083	42
Premature birth and diseases of early infancy	19,012	42
Old age	24,564	54
Violence (all forms)	18,620	41
Other causes	34,998	76
Total	453,804	1,000

MORBIDITY

Smallpox.—In 1926 there were 10,146 cases of smallpox notified in England and Wales, and the report states clearly that the time has come for the public to choose between smallpox and vaccination.

Enteric fever.—There were 2,739 cases of enteric fever, a slight decrease as compared with 1925.

Diphtheria.—In 1926 there were 51,069 cases of diphtheria, with 2,994 deaths. Local authorities are advised to aim primarily at offering protection to the preschool population through infant welfare or special clinics.

Influenza.—A mild epidemic of influenza broke out in London early in 1926 and spread slowly northward. The death rate was low. Among the researches carried out under the auxiliary scientific investigation fund was the prosecution of a study of the respiratory flora of apparently normal persons. There was found to be no increase in the pneumococcus during the late autumn of 1925, although there was some increase in Pfeiffer's bacillus. In 1926, the situation completely changed; the pneumococcus rose from under 10 per cent to 60 per cent between October and November, and remained high up until the end of January. Pfeiffer's bacillus also increased, less notably, but in January suddenly became very prevalent. It

would thus appear that a sudden increase in the frequency of healthy carriers of pneumococci precedes an epidemic manifestation of influenza.

Infections of the nervous system.—While the reported prevalence of cerebrospinal fever (meningococcus meningitis) and lethargic encephalitis was less than in 1925, there was a striking increase in poliomyelitis. In a review of poliomyelitis it is concluded that Wickman's original findings in favor of contact transmission have been amply confirmed.

Cancer.—The mortality rate for cancer was 136.2 per 100,000. A study of cancer indicated that many supposed predisposing conditions had no influence in encouraging cancer growth, while the predisposing significance of injury, infertility, and chronic mastitis was confirmed. A form of "follow-up" system is being instituted in the large county hospitals. All clinical data collected are submitted to careful analysis. Where deductions are adequately supported, reports are prepared for practitioners.

Tuberculosis.—Notification of cases of tuberculosis is inadequate. It is stated that many cases are not notified before death and still more only during the last six months before death from the disease. The decline in this disease is attributed to the public-health campaign against it. On February 1, 1927, there were 442 dispensaries in England, 69 special centers, and 367 tuberculosis officers. The time is considered opportune for a few colony schemes to be tried experimentally. The second report on "sanocrysin" from the Medical Research Council concluded that it is of value in certain carefully selected cases only.

Venereal diseases.—At the close of 1926 there were 181 treatment centers in England and 9 in Wales—3 less than in 1925. These centers were staffed by 391 approved venereal disease officers. The returns from these centers show a total of 2,008,063 attendances, some other than venereal diseases, however. The total number of persons having venereal disease dealt with for the first time was 58,752.

Maternity and child welfare.—The forecasts of the effect of the strike on the physique and vigor of school children were not fulfilled—partly as a result of the provision of meals at school and the distribution of free milk. The maternal mortality rate, 4.12, showed a slight rise. There are now 772 prenatal centers, 105 homes for unmarried mothers, and 2,324 infant welfare clinics. The report notes that the money spent on centers and health visitors brings the greatest return on expenditure for maternity and child welfare.

Research work.—Published studies on the hemolytic streptococci support the view that these organisms are the cause of scarlet fever.

Studies were also made on the virulence of pneumococci and immunity. Other research work included school anthropometry, the factors in puerperal mortality, incidence of disease in cotton spinners in wet and dry sheds, and health in the printing industry.

A disquieting increase was noted in deaths from anesthesia, and it is intended to secure data giving the fatality ratio and to relate it to different anesthetics and methods of administration.

The Chief Medical Adviser notes in his summary that "the progress of a nation's health is * * * a passage through the centuries, and founded mainly on an exclusive regard to the immediate interests and problems of human survival. We are dealing with the proposition of remaining alive in the world, of enlarging the content of life, of increasing its capacity * * *. Can any enterprise be greater? There is hardly a department of the State which will not, consciously or unconsciously, make a contribution to the condition of the public health."

POLIOMYELITIS CASES REPORTED BY STATES, OCTOBER 16 TO NOVEMBER 5, 1927, AND CORRESPONDING WEEKS OF 1925 AND 1926

The following table gives a comparison of the telegraphic reports from State health officers for the three-week period from October 16 to November 5, 1927, with the reports from the same sources for the corresponding period of the years 1925 and 1926. This table is a continuation of tables appearing in the Public Health Reports October 7, 1927, page 2452, November 4, 1927, page 2726, and November 11, 1927, page 2794. Reports for the week ended November 12, 1927, will be found on page 2866 of this issue.

Cases of poliomyelitis reported by State health officers October 16–November 5, 1927, compared with reports for the corresponding weeks of 1925 and 1926

State	Week ended—								
	Oct. 22, 1927	Oct 23, 1926	Oct. 24, 1925	Oct. 29, 1927	Oct. 30, 1926	Oct 31, 1925	Nov 5, 1927	Nov. 6, 1926	Nov. 7, 1925
Alabama	2	1	2	1	0	0	0	1	1
Arizona	4	0	0	1	0	0	0	0	0
Arkansas	2	2	0	2	0	1	1	0	0
California	32	6	9	30	1	4	35	5	11
Colorado	7	0	0	6	0	1	7	1	0
Connecticut	9	1	1	9	4	0	7	0	1
Delaware	0	0	0	0	0	0	1	0	0
District of Columbia	3	0	0	1	1	0	0	1	1
Florida	0	0	1	3	0	0	1	0	1
Georgia	1	0	2	0	0	2	0	0	2
Idaho	0	0	0	2	0		8	0	
Illinois	37	5	15	25	4	7	14	2	11
Indiana	11	2	2	19	2	3	11	2	7
Iowa		0	9	8	0		3	0	
Kansas	8	0	5	14	3	6	4	1	4

Cases of poliomyelitis reported by State health officers October 16–November 5, 1927, compared with reports for the corresponding weeks of 1925 and 1926—Con.

State	Week ended—								
	Oct. 22, 1927	Oct. 23, 1926	Oct. 24, 1925	Oct. 29, 1927	Oct 30, 1926	Oct. 31, 1925	Nov 5, 1927	Nov. 6, 1926	Nov. 7, 1925
Louisiana	2	0	0	2	0	1	0	1	3
Maine	13	1	0	6	1	0	5	0	0
Maryland	2	2	19	3	1	4	1	1	1
Massachusetts	99	9	10	66	6	4	56	10	5
Michigan	18	0	0	18	0	0	14	0	0
Minnesota	8	0	17	6	2	18	3	0	5
Mississippi	2	2	0	0	1	0	3	0	0
Missouri	9	1	2	12	0	4	7	0	1
Montana	2	0	3	0	0	0	1	0	0
Nebraska	5	0	16	14	1	7	10	3	2
New Jersey	11	3	3	8	1	2	9	2	4
New Mexico	7	0	0	3	0	1	2	0	1
New York	32	23	28	31	14	6	23	9	23
North Carolina	1	2	1	1	2	0	2	3	2
North Dakota	0	0	3	0	0	1	------	0	3
Ohio	46	------	------	51	------	------	54	------	------
Oklahoma	10	1	1	7	0	0	3	2	1
Oregon	31	1	0	26	1	0	20	1	2
Pennsylvania	45	9	------	18	3	------	18	6	6
Rhode Island	3	2	------	4	------	0	3	0	1
South Carolina	3	3	3	2	10	4	4	2	2
South Dakota	5	0	2	6	0	2	7	1	0
Tennessee	7	0	------	2	0	------	4	0	------
Texas	9	0	1	3	0	0	11	2	2
Utah	0	0	1	2	1	0	2	0	1
Vermont	7	0	5	6	0	2	------	0	2
Virginia	0	0	1	2	0	0	0	0	0
Washington	22	0	7	21	0	9	26	1	4
West Virginia	17	0	0	9	2	0	12	0	0
Wisconsin	8	5	7	9	4	14	8	2	7
Wyoming	1	0	0	1	0	0	0	2	0

COURT DECISIONS RELATING TO PUBLIC HEALTH

Reporting of suspected cases of communicable diseases; quarantine where health official had reasonable grounds to believe public health required same.—(Missouri Supreme Court, Division No. 1; McGuire *v.* Amyx et al., 297 S. W. 968; decided September 16, 1927.) The plaintiff, a 7-year old girl, accompanied her mother to the office of the family physician, the purpose of the visit being the examination and treatment of the mother. The physician's attention was attracted to a "breaking out" on the child, and he concluded that she was afflicted with smallpox. Upon his report to the city health authorities the child and mother were taken in an ambulance to the dispensary where the chief diagnostician of the division of health of the city examined the child and, having diagnosed the case as smallpox, committed her to the quarantine hospital. At the hospital the child was confined in the smallpox ward with persons suffering from smallpox, and, after remaining there for several days, was discharged as cured. A few days after her discharge the child was taken ill, and, the sickness being diagnosed as smallpox, was again

committed to the hospital where she remained until again discharged as cured. An action for damages was brought against the family physician and the chief diagnostician, it being alleged that, at the time of the first commitment, the plaintiff was suffering from no disease but contracted smallpox while in the hospital the first time. The evidence for plaintiff tended to show that while in the hospital the first time she was not sick and spent the time playing in the yard and helping the nurses. There was a verdict and judgment in the trial court for the defendants, which judgment was affirmed by the supreme court. The following is excerpted from the appellate court's opinion:

* * * The public health is of the greatest concern to all. By law its keeping rests with the attending physicians, householders, and health officers. Public policy favors the discovery and confinement of persons afflicted with contagious diseases, and we think it is not only the privilege, but the duty, of any citizen acting in good faith and on reasonable grounds to report all suspected cases that examination may be made by experts and the public health thereby protected. We hold this may be done without being subjected to liability for damages. To hold otherwise would not only invite indifference at the expense of society, but the fear of liability would well-nigh destroy the efforts of officials to protect the public health. Any citizen may without malice and with probable cause bring about the arrest and prosecution of another without liability in damages. We think one who reports a suspected case of a contagious disease to the health officers in good faith and on reasonable grounds should have like protection. Respondent Amyx [the family physician] did not commit appellant to Koch's Hospital. She was committed by the proper city authority. Amyx's interest in making the report was that of a citizen interested in the public health and the health officers had a corresponding interest. The report of Amyx to the health department may be likened to communications classified as qualifiedly privileged in libel and slander cases. * * *

The supreme court also approved, as correctly declaring the law, an instruction to the jury that the chief diagnostician was not liable if he had reasonable grounds to believe that the public health required that the plaintiff be quarantined to prevent other persons from becoming infected with smallpox.

Workmen's compensation act construed.—(Washington Supreme Court; Depre *v.* Pacific Coast Forge Co., 259 P. 720; decided October 4, 1927.) The plaintiff was employed for 23 months by the defendant in a room where there was a tank into which was poured each day a large quantity of sulphuric acid and muriatic acid. He brought an action for damages, claiming that gases and vapors were released in the room where he worked which inflamed and affected his lungs and lessened his resistance to tuberculosis, and that, as a result, he contracted the said disease, which permanently incapacitated him. The complaint charged negligence in failing to provide the workroom with sufficient ventilation, and alleged a request for such ventilation and a promise by the defendant to provide it. The

defendant insisted that the workmen's compensation act was a complete defense to the action, and that, by its terms, plaintiff was entitled to compensation from the State. The supreme court pointed out that the said act had been in existence some 16 years and that this was the first time it had been contended that a disability such as plaintiff suffered came under its provisions, and held that the act was no defense to the action, stating:

* * * We think it sufficient to adhere to our former holding that "fortuitous event" and "accident" as used in the act are synonymous and that to receive compensation from the State there must be some unexpected or sudden happening from which a report or claim can be made which is referable to a definite time, place, and cause.

Action against city for negligent disposal of sewage.—(Oklahoma Supreme Court; City of Lawton *v.* Wilson, 259 P. 650; decided September 27, 1927.) An action was brought against the city of Lawton for damages on account of alleged negligence in the disposal of sewage. The plaintiff alleged that the city had for 15 years discharged its sewage into a certain creek, which ran across plaintiff's farm, in such a manner as to cause pollution of the waters. The defendant contended that the statute of limitations was a bar to the action, but the supreme court, after quoting from several cases, said:

From the above authorities it seems clear to us that, when the plaintiff below by competent evidence showed that the defendant was negligent in the manner in which it operated the disposal plant, and it was further shown that by the use of labor and money the city could have repaired the defect in said plant, and said acts of negligence occurred within two years last past prior to the commencement of plaintiff's cause of action, under this showing by the plaintiff the statute of limitations could not be pleaded in bar of plaintiff's right of recovery.

PUBLIC HEALTH ENGINEERING ABSTRACTS

The Removal of Household Garbage in Paris. Anon. *Journal of the American Medical Association*, vol. 89, No. 4, July 23, 1927, p. 305. (Abstract by R. J. Morton.)

During the last 30 years the garbage of Paris has been deposited in zinc boxes, uncovered, which were placed on the sidewalks every evening, where they remained from 8 to 10 hours publicly displayed and subjected to ransacking by ragpickers. Numerous complaints to the public health council have been unavailing until recently, when it was decided that after January 1, 1929, all garbage boxes must be covered. It was further decided that boxes must not be placed on the sidewalks earlier than 5 a. m. and that an adequate fleet of automobile trucks, having closed bodies, should be organized to start at 5 o'clock each morning, rapidly collecting the garbage and hauling it out of the city.

Disposal has been effected by burning the garbage and forming the calcined residue into bricks for construction purposes, an expensive process requiring large crews. Experiments are being started at Versailles, investigating the digestion process introduced in Florence by the Italian engineer, Beccari, with a view to

adoption of this process for Paris if the results of the experiments promise good returns. The claims for the process state that it is inexpensive to operate, requires 40 days' digestion in 20-cubic-meter concrete tanks, yields a pulpy fertilizing substance containing 1.3 per cent nitrogenous products, requires small area for plant, and can be built in immediate proximity to the city without trouble from odors. Final judgment as to the value of this system will be based on results of the present study.

A Study of Refuse Collection and Disposal in Sydney, Australia. R. K. Newman, *American City*, vol. 37, No. 1, July, 1927, pp. 61–63. (Abstract by A. S. Bedell.)

This article is an abstract of Mr. Newman's comprehensive report on the subject. The refuse burnt in the destructors in Sydney is of three types—household refuse, early morning refuse, and trade refuse. Household refuse represents 60 per cent of the total and consists of garbage, dirt, ashes, cans, and paper, weighing 750 to 800 pounds per cubic yard. Early morning refuse, the refuse collected between 6.30 and 8.30 a. m., is intermediate in composition between household and trade refuse, consisting of shop, office, cafe, and hotel refuse, averaging 36 per cent paper and weighing 500 pounds per cubic yard. Refuse from municipal fish, fruit, and vegetable markets is converted by a private company into fertilizer.

Owing to mixed collection, the results of analyses of Sydney refuse differ from those prevailing in America, being 44.7 per cent water, 29.7 per cent combustible, and 25.6 per cent ash, and having a calorific value of 3,007 British thermal units. The recommended method of disposal is separation-incineration, and the specifications for a new destructor should provide that it burn, without additional fuel, mixed refuse containing not over 900 pounds of water per ton and not less than 800 pounds of combustibles.

Purification of Waste Water in Industry, Especially of Water from Dye Works. Dr. Drechsler. *Gesundheits-Ingenieur*, vol. 46 (1926), pp. 709–715. (Abstract by J. K. Hoskins.)

Liquid wastes of varied character are produced from the many processes employed in the textile trades. For a clearer understanding of their composition, some of these manufacturing processes are briefly described, such as wool scouring and washing, mercerizing, linen bleaching, and cotton dyeing and bleaching. Representative analyses are presented of the wastes resulting from the latter two processes.

The greater part of the impurities contained in these waste waters is of colloidal formation, for the removal of which two procedures are available—precipitation or absorption by cinders or other filtering material. After setting forth the general requirements of treatment plants of this nature, the author divides existing installations into three classes: (1) Those which retain the combined wastes in settling basins and, depending on the receiving stream, may or may not employ chemical precipitants; (2) those in which the concentrated wastes are separated from the more dilute ones and either receive chemical treatment or plain sedimentation previous to mixing with the dilute wash waters; and (3) those which clarify the combined wastes by filtration through cinders, sand, etc., with or without previous sedimentation in basins.

A description of existing installations of each of the above classes treating various textile and dye wastes is given, together with operating data and analytical results.

The Significance of Nitrogen Determinations in Sanitary Analysis. L. L. Necol and A. M. Buswell. *Journal American Water Works Association*, vol. 17, No. 3, March, 1927, pp. 388–395. (Abstract by M. S. Foreman.)

Free ammonia is perhaps the oldest of the nitrogen methods in sanitary analysis. As an end product in bacterial metabolism of nitrogenous compounds, ammonia determinations may signify remote pollution of water by organic matter. Many difficulties have arisen in accurately determining ammonia by distillation. It is impossible to distinguish sharply between preexisting free ammonia (of ammonia salts) and that formed by the alkaline permanganate, the albuminoid ammonias. Direct nesslerization followed by copper sulphate clarification, although quite accurate, is an uncertain procedure when dealing with a mixture like sewage. Sulphur compounds and aldehydes produce too dark a color; protective colloids like proteins and peptones, which are not removed by $CuSO_4$ treatment, inhibit color formation.

Urea, during permanganate digestion, is incompletely hydrolyzed. It was soon recognized that albuminoid ammonia nitrogen represented only a fraction of the total, and various multiples of it have been adopted as measures of total nitrogen. The authors conclude that the Kjeldahl method for total nitrogen determinations is preferable. Since free ammonia may be subtracted from it to give total organic nitrogen, in this way amine-nitrogen is included in the total nitrogen.

Summary.—(1) The authors' analyses show that the main nitrogenous components of sewage are urea and ammonia; (2) these components bear no constant relation to the oxidizable organic matter; (3) the albuminoid ammonia test, since it measures an indefinite portion of urea, is worthless; (4) free ammonia also includes some of the urea and is erroneous if distillation is used; (5) if nitrogen data are desirable, suitable methods could be chosen for nitrogenous constituents.

Efficiency of Chlorinating Sewage Tank Effluents. W. V. D. Tiedeman. *Engineering News-Record,* vol. 98, No. 23, June 9, 1927, pp. 944–948. (Abstract by G. H. Hazlehurst.)

This article takes up the practicability of chlorination of sewage and the advantages of control by the orthotolidine test for residual chlorine.

For the purpose of determining the bacterial efficiency of chlorination of sewage tank effluent under varying seasonal conditions, the sewage treatment plant at Huntington, Long Island, was operated during 1926 on a residual chlorine basis, using the orthotolidine test.

A record of the findings is given in detail, with the following conclusions being drawn from the work: (1) The method of operating sewage chlorinating plants by setting a fixed minimum dosage to be used the year round is inefficient or uneconomical, or both; (2) the orthotolidine test for residual chlorine, while perhaps not giving an exact quantitative measure of the free chlorine in concentrated sewages, is a valuable index and offers a method of control by nontechnical operators; (3) liquid chlorine, when applied in sufficient quantities to produce a residual of 0.2 p. p. m., as indicated by the orthotolidine test, will effectively disinfect a poorly clarified tank effluent from concentrated domestic sewage; (4) contact periods in excess of five minutes are nonessential where residual chlorine is maintained, except for the purpose of smoothing out minor fluctuations in quantity and quality of the sewage; (5) the fine solids in tank effluents are penetrated by chlorine when a residual of 0.2 p. p. m. or more is maintained, and efficient disinfection results; (6) chlorination of the tank effluent at Huntington results in a noteworthy *permanent* reduction in the biochemical oxygen demand of the effluent; (7) there are various means of practically applying chlorine control through use of the orthotolidine test to effect varying degrees

of economy; (8) on large plants the saving in chlorine may be sufficient to justify the additional labor necessary to provide hourly control by the orthotolidine test.

Effect of Chlorine on Nitrogenous Bodies in Sewage Effluent Treatment. Frank E. Hale. *Water Works Engineering*, vol. 80, No. 16, August 3, 1927, pp. 1135–1136. (Abstract by L. H. Enslow.)

Chlorine applied to sewage effluents at the Mount Kisco and Bedford, N. Y., plants has been shown to destroy certain nitrogenous bodies. Apparently the chlorine replaces the nitrogen and thus forms chlorinated end products from the amines and similar compounds. Kjeldahl determination of organic nitrogen would seem to indicate that organic nitrogen bodies have been so changed in composition by chlorination that losses in recoverable organic nitrogen varying from 47 per cent to 94 per cent occur. In addition to this displacement of organic nitrogen the "free" ammonia content is reduced to a considerable extent by chlorine. Apparently the nitrite nitrogen is displaced rather than oxidized.

The basic reaction which explains the observed results is most probably

$$2NH_3+3Cl_2=6HCl+N_2$$

with the probability that various intermediate products are first formed.

The conclusion drawn is that chlorine not only forms substitution products with amino compounds, but actually destroys them. It is likewise suggested that in all probability "sterilizing action is due to the destruction of the amino compounds in the protoplasm."

Antimalaria Work at Moascar, Egypt, in 1925 and 1926, and the Results Compared with the Previous Two Years. Kenneth Comyn. *Journal of the Royal Army Medical Corps*, vol. 49, No. 1, July, 1927, pp. 14–26. (Abstract by C. H. Kibbey.)

The author prefaces a comprehensive study of the malaria control problems presented in the immediate vicinity of Moascar, and a report of experiences of the Royal Army Medical Corps for the years 1923, 1924, 1925, and 1926, with a historical sketch of the Suez Canal Zone from 1877. Malaria statistics covering both civil and military population are given and a report of the Anti-Malaria Commission of 1919 is quoted.

Antimalaria work at Moascar seems to have been started in earnest by Maj. N. Low in 1923, and consisted mainly of draining and oiling certain local marshlands and supervising cultivated, irrigated areas in the vicinity to prevent mosquito breeding. The present antimalaria scheme, combining antimosquito work and quinine prophylaxis, was begun in November, 1924.

The author here enters a discussion of the general principles involved in a malaria control campaign, together with a description of the many phases of the local problem, and summarizes the measures adopted for relief. A mosquito squad, consisting of a chief and three men, was organized and trained to search out and destroy all larvæ breeding in the camp, keeping a record of all findings. Mosquitoes were captured and examined to identify species and determine proportionate numbers of each variety. Each malaria patient was given 30 grains of quinine daily for a period of three weeks and then 10 grains daily for six days out of every seven for a further period of two months. Every man in each military unit with a history of malaria was given 10 grains of quinine once each week from May 1 to October 31. All night guards were given 5 grains of quinine when going on duty and another 5 grains on being relieved the following morning.

The incidence of malaria for the four years under review is shown by tabulation and graphic chart, the influence of previous infection in a unit is comprehensively discussed, and a comparison is made of recurrence by units. Five

recurrences were noted among a total of 164 men who were previously infected, in four units. The seasonal incidence is not associated with the rainy season, but with a rising temperature. The swamps from which *Anopheles* invade Moascar exist all the year round. *Anopheles* mosquitoes begin to come in by the middle of July, and are at their maximum in August before the rising of the Nile with its consequent flooding of swamp area. The author believes the main factor in *Anopheles* production around Moascar to be "the temperature, and more especially the mean temperature of the ground."

No *Anopheles* mosquitoes were found in camp during the winter months. They began to appear in July and increased in number to a maximum during August to October and disappeared entirely by December. *Anopheles* larvæ were never found in the camp area, notwithstanding that sump pits, grease traps, etc., afforded excellent breeding places for the culicines. The anophelines show a marked preference for clear water, whereas the culicines, especially *C. pipiens*, may be found even in sump pits, grease traps, and any dirty, foul water.

The *Anopheles* varieties identified are *A. pharoensis* and *A. multicolor*, of which the former are far the more abundant, with *A. multicolor* appearing only in small numbers and late in the year. The number of mosquitoes found in the wards varies with the month and without reference to weather conditions. Prevailing wind direction did not appear to influence the influx of anophelines. It is probable that anophelines may come many miles from their breeding grounds irrespective of wind direction.

The author concludes that: (1) Malaria can not be stamped out completely; (2) attention to source of infection (infected individual) and the treatment of cases are more important than trying to exterminate the carrier (mosquito); (3) a regiment with a previous malarial history should not be a source of danger if strict supervision is maintained; (4) prophylactic quinine is of great benefit if the source of infection is known, and it can be given to persons known to be exposed as in case of night guards on duty near an infected village; (5) most carefully planned antimalarial measures may be annulled by failure of a unit to carry them out.

A New Species of Anopheline, A. pseudojamesi, Common in Bengal. C. Strickland and K. L. Chowdhury. *Indian Medical Gazette*, vol. 62, No. 5, May, 1927, pp. 240–243. (Abstract by C. T. Butterfield.)

New species described, of which the larvæ resemble and were at first thought to be *pulcherrimus*. The adult was at first mistaken for *jamesi*. Later they were quite generally found and identified as a new species.

Structural descriptions of the larvæ and adult are given with descriptive charts.

Flies and Their Eradication. W. C. Carr. *U. S. Naval Bulletin* vol. 25. No. 3, July, 1927, pp. 528–542. (Abstract by J. L. Robertson.)

This article treats of the order Diptera, family *Sarcophagidæ*. Herein is discussed the characteristics, construction, and life habits of the blue bottle and green bottle flies, the screw-worm fly, and the common house fly.

The house fly lays about 120 eggs at one time in small irregular clusters, preferably in moist, fermenting horse manure, but also decaying vegetable matter in absence of the former. These eggs, oval, elongated, and glistening white, hatch in 8 to 10 hours under favorable conditions. The white conical larva (maggot) sheds its skin twice, in four or five days, and burrows just beneath the surface of the earth. The outer skin hardens and turns brown. This pupa stage lasts for four or five days and then the adult fly emerges. Flies do not hibernate during the winter months; winters are passed in the larva and pupa states.

Eradication efforts must be concentrated along two lines, viz, (1) prevention of breeding and (2) destruction of the adult fly. A workable line of campaign is—

I. Prevention of fly breeding:
  A. Efficient waste disposal.
    1. Garbage—houses, containers, collecting, and disposal.
    2. Rubbish.
  B. Care of barns, pens, and dovecotes.
    1. Screening.
    2. Manure.
    3. Spraying.
  C. Care of streets.
  D. Care of ravines.
II. Destruction of adult fly:
  A. Swatting.
  B. Trapping.
  C. Use of chemicals.

This article treats further and at length of the construction, care, and operation of garbage houses, incinerators, barns, pens, and dovecotes. Diagrams are given. Care of streets and the campaign against the adult fly are discussed.

Conclusions.—(1) Breeders and breeding materials are the real sources of all flies of a season; (2) attacks directed toward eradication of the adult are only of secondary importance; (3) in order to diminish the fly nuisance, the breeding must be prevented or eliminated; (4) coal tar, creosote oil containing 14 to 18 per cent coal-tar acids and 4 per cent bases, was the most effectual spray used in the campaign, being both a fly repellent and larvicide; (5) a thorough and early study of the problem must be instituted to insure a successful antifly campaign.

The Use of Fishes for the Control of Mosquitoes. Sunder Lal Hors. *Indian Medical Gazette*, vol. 62, No. 4, April, 1927, pp. 187-188. (Abstract by P. S. Fox.)

The writer laments the fact that there are no fish hatcheries within reasonable distances from which to procure larvicidal fishes. He brings out the need of investigation to determine the various types of native fishes, of a larvicidal character, which could be propagated in lieu of importing fishes which might lose their larvicidal properties in case of a change of environment. "Biological control" by the introduction of hostile insects, etc., is favored instead of spraying or fumigation.

The Biological Control of Impounding Reservoirs. Carl Wilson. *American Water Works Journal*, vol. 17, No. 2, February, 1927, pp. 247-252. (Abstract by W. L. Havens.)

The knowledge of biological factors is becoming very important both in the design of storage reservoirs and in the development of new ways for improving water under storage. In Southern California, where the reservoirs often receive no influx of new water for months at a time, stratification of the water takes place on account of temperature differences. As a result of this condition, bacterial activity quickly absorbs the available oxygen and decomposition takes place with attendant odors. In the case of the Lower Franklin Reservoir, this condition has been eliminated by the introduction of the water through jets in pipe lines on the lake bottom, thus preventing stagnation. Plankton growths are often found helpful in furnishing oxygen for a water in which the oxygen supply has been depleted by fish life. Considerable trouble has been experienced in the case of Los Angeles supply by pollution from birds, chiefly sea gulls and mudhens. This trouble has not been from a bacterial standpoint, however, because chlorination can be used to remove the bacteria, but in some cases at least the amount of oxygen consumed in the reduction of fecal matter has been enough to deplete the available reserve. Another instance of biological action is the reduction of temporary hardness by plankton algæ. The article

concludes that the amount of work done by living plants and animals in storage reservoirs is astonishingly great, and means will be found to direct at least part of these activities for the benefit of man.

City Water Supplies in Arkansas. Harrison Hale. *American Water Works Journal*, vol. 17, No. 2, February, 1927, pp. 261–262. (Abstract by W. L. Havens.)

Data soon to be published as a bulletin of the Engineering Experiment Station, University of Arkansas, show that the water of that State is generally clear and free from odor and any considerable amount of color. Fifty-eight per cent of the supplies reported are from wells. In the larger cities and towns, filtration and a germicide, usually chlorination, are generally used. In some only chlorination is used, while in a majority treatment is not yet given.

Twenty Years of Chlorination of Public Water Supplies. N. J. Howard. *American City*, vol. 36, No. 6, July, 1927, pp. 791–794. (Abstract by S. H. Smith.)

This is a discussion of the prechlorination of waters as a substitute for alum, either entirely or partly, in physically good raw waters, thereby effecting a saving in cost of operation. Other advantages claimed for prechlorination are reduction of filter loading in heavily polluted water, increased rates of filtration, reduced operating costs, and added safeguards in water subject to rapid periodic changes in quality. There is no evidence that prechlorination increased the residual colloidal alumina, and theoretical considerations would indicate a decrease. Increased use of chlorine for the prevention of algal growths in filter drains and sedimentation basins, for the sterilization of new water mains, and for sterilization of swimming pools, is noted. Chloramine and dichloramine, which consist of mixtures of chlorine and ammonia, have sterilizing powers not possessed by ammonia, have great possibilities for cities troubled with after-growths in mains or troublesome spore-forming bacteria, and are said not to cause taste in the treated water. Superchlorination and dechlorination for the removal of tastes are discussed. Experiments in Canada and England are mentioned.

Sanitary Engineering Problems of the Mississippi Flood. W. H. Weir. *Public Works*, vol. 58, No. 8, August, 1927, pp. 288–290. (Abstract by W. A. Hardenbergh.)

Sanitation methods in the flood area were worked out very hurriedly, from necessity, but, as a rule, good results were obtained. Labor companies were organized, and the company leader was made responsible to the camp commander for the sanitation of a definite section of the camp. Latrines of the pit type were constructed, but the high water level, often only a few inches below the ground surface, necessitated frequent moves. Sand bags piled around the pits formed a water-tight base for the seats, and extended the life of the toilets by increasing the space above the level of the ground water. All water for camp use, with few exceptions, was obtained from temporary sources. Small wells were driven and equipped with hand pumps. Where possible, water considered dangerous was chlorinated in barrels, or boiled, the latter method being relied on very largely.

As the water subsided, towns were cleaned up. Crude oil was used freely to burn waste, trash, and dead animals. Public water supplies were generally in bad shape. As soon as pumping equipment was put in condition, wells were pumped to discharge flood waters, and distribution systems flushed to eliminate mud. Chloride of lime in sufficient quantities to give free chlorine at the ends of mains was mixed in elevated tanks and reservoirs. Where the type of well pump permitted, emergency chlorinators were installed and mains and water were sterilized with a heavy dosage of chlorine. In some areas, despite all this, the boiling of water was necessary, as it was throughout the rural sections.

How to Safeguard the Milk We Use. J. W. S. McCollough. *Public Health Journal* (Canada), vol. 18, No. 6, June, 1927, pp. 255–257. (Abstract by W. D. Tiedeman.)

This article was prepared for use as a pamphlet for the Canadian public and municipal authorities. The importance of milk as a food is stressed, and it is pointed out that milk is consumed raw while other animal foods are cooked. A series of fairly recent milk-borne typhoid fever epidemics in Canada are mentioned in order to stress the dangers of a raw milk supply. These include the recent epidemic at Montreal, where it is stated that 4,500 cases of typhoid fever resulting in 200 deaths occurred during March, April, May, and June, 1927. The possible dangers from other milk-borne diseases are pointed out.

Pasteurization of all milk at a temperature of 140° F. to 145° F. for 30 minutes is advocated to avoid this danger to the public health. The use of certified milk is not advocated, since it is not only expensive but unsafe, owing principally to the continued development of tuberculosis among regularly tuberculin tested herds. The usual objections to Pasteurization, such as unnatural souring, destruction of vitamins, use of dirty milk, creation of monopolies in local markets, and effect on taste, are stated and answered.

It is pointed out that, under the amended milk act of 1927, local laws may be enacted requiring Pasteurization of all milk sold in any community.

DEATHS DURING WEEK ENDED NOVEMBER 5, 1927

Summary of information received by telegraph from industrial insurance companies for week ended November 5, 1927, and corresponding week of 1926. (From the Weekly Health Index, November 9, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Nov 5, 1927	Corresponding week, 1926
Policies in force	68, 981, 301	65, 817, 537
Number of death claims	11, 878	10, 837
Death claims per 1,000 policies in force, annual rate	9. 0	8. 6

Deaths from all causes in certain large cities of the United States during the week ended November 5, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, November 9, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Nov. 5, 1927		Annual death rate per 1,000 corresponding week, 1926	Deaths under 1 year		Infant mortality rate, week ended Nov. 5, 1927 [2]
	Total deaths	Death rate [1]		Week ended Nov 5, 1927	Corresponding week, 1926	
Total (67 cities)	6, 709	11. 9	[3] 11. 8	646	[3] 705	[4] 54
Akron	43			5	7	54
Albany [5]	32	13. 9	19. 7	0	1	0
Atlanta	76			11	7	
White	41			5	2	
Colored	35	(6)		6	5	
Baltimore [5]	228	14. 5	12. 5	25	23	79
White	177		10. 8	17	17	68
Colored	51	(6)	21. 9	8	6	125
Birmingham	67	16. 2	11. 6	9	7	
White	35		11. 8	4	5	
Colored	32	(6)	11. 3	5	2	
Boston	193	12. 7	12. 3	30	22	84
Bridgeport	17			1	2	17
Buffalo	125	11. 9	13. 7	18	17	76
Cambridge	23	9. 7	11. 5	4	2	71
Camden	34	13. 3	13. 9	6	4	103

1 Annual rate per 1,000 population.
2 Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
3 Data for 66 cities.
4 Data for 62 cities.
5 Deaths for week ended Friday, Nov. 4, 1927.
6 In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta 31, Baltimore, 15, Birmingham 39, Dallas 15, Fort Worth, 14, Houston 25, Indianapolis 11, Kansas City (Kans.) 14, Knoxville 15, Louisville 17, Memphis 38, Nashville 30, New Orleans 26, Richmond 32, and Washington, D. C., 25.

Deaths from all causes in certain large cities of the United States during the week ended November 5, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, November 9, 1927, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended Nov. 5, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Nov. 5, 1927
	Total deaths	Death rate		Week ended Nov. 5, 1927	Corresponding week 1926	
Canton	21	9.7	10.0	2	2	48
Chicago [5]	626	10.5	10.3	43	62	37
Cincinnati	147	18.6	16.2	9	11	54
Cleveland	193	10.2	10.3	16	18	43
Columbus	60	10.8	14.5	11	8	102
Dallas	48	12.0	11.8	9	7	
White	38		10.4	8	6	
Colored	10	(6)	21.2	1	1	
Dayton	45	13.0	10.6	5	2	83
Denver	76	13.7	14.5	8	6	
Des Moines	32	11.2	7.1	2	2	35
Detroit	261	10.2	11.4	32	46	49
Duluth	27	12.2	11.1	3	2	65
El Paso	33	15.1	13.4	5	7	
Erie	19			3	4	64
Fall River [5]	28	11.0	11.1	3	4	51
Flint	35	12.8	9.2	10	7	157
Fort Worth	23	7.3	11.5	2	5	
White	16		10.1	2	5	
Colored	7	(6)	22.0	0	0	
Grand Rapids	34	11.2	11.4	2	4	29
Houston	62			9	6	
White	49			7	6	
Colored	13	(6)		2	0	
Indianapolis	92	12.8	12.4	11	10	84
White	73		11.8	7	9	61
Colored	19	(6)	16.6	4	1	242
Jersey City	58	9.4	9.7	7	7	53
Kansas City, Kans	23	10.3	15.6	1	2	21
White	17		14.6	1	1	25
Colored	6	(6)	20.3	0	1	0
Kansas City, Mo.	104	14.2	12.8	10	9	
Knoxville	30	15.3		3		
White	17			2		
Colored	13	(6)		1		
Los Angeles	239			14	23	40
Louisville	64	10.4	12.6	8	6	67
White	53		11.1	7	5	66
Colored	11	(6)	20.9	1	1	69
Lowell	26	12.3	11.8	2	1	42
Lynn	16	7.9	11.0	0	0	0
Memphis	56	16.3	17.4	6	8	
White	29		12.9	5	4	
Colored	27	(6)	25.6	1	4	
Milwaukee	118	11.6	10.1	12	14	55
Minneapolis	89	10.5	10.0	3	4	17
Nashville [5]	42	15.9	24.7	3	14	
White	26		23.4	3	10	
Colored	16	(6)	28.1	0	4	
New Bedford	25	10.9	11.3	5	1	94
New Haven	39	11.0	10.9	4	4	56
New Orleans	135	16.6	19.0		18	
White	87		15.1		10	
Colored	48	(6)	30.1		8	
New York	1,316	11.5	11.1	129	109	54
Bronx Borough	154	8.7	8.1	12	16	38
Brooklyn Borough	437	10.0	10.6	52	42	54
Manhattan Borough	576	16.5	14.3	52	43	62
Queens Borough	116	7.5	7.7	10	5	44
Richmond Borough	33	11.7	13.5	3	3	57
Newark, N. J	90	10.1	10.3	10	8	50
Oakland	62	12.1	11.0	10	6	118
Oklahoma City	20			4	5	
Omaha	55	13.1	10.4	2	5	23

[5] Deaths for week ended Friday, Nov. 4, 1927.

[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta 31, Baltimore 15, Birmingham 39, Dallas 15, Fort Worth 14, Houston 25, Indianapolis 11, Kansas City (Kans.) 14, Knoxville 15, Louisville 17, Memphis 38, Nashville 30, New Orleans 26, Richmond 32, and Washington, D. C., 25.

Deaths from all causes in certain large cities of the United States during the week ended November 5, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, November 9, 1927, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended Nov. 5, 1927		Annual death rate per 1,000 corresponding week, 1926	Deaths under 1 year		Infant mortality rate, week ended Nov. 5, 1927
	Total deaths	Death rate		Week ended Nov. 5, 1927	Corresponding week, 1926	
Paterson	45	16 3	12.4	2	2	36
Philadelphia	456	11.7	13.4	38	45	51
Pittsburgh	181	14.7	10.2	23	22	80
Portland, Oreg	68			2	4	21
Providence	65	12.1	10.4	6	6	52
Richmond	56	15.2	18.8	10	9	130
White	32		16.0	6	4	121
Colored	24	(6)	25.4	4	5	147
Rochester	79	12.7	10.4	9	13	76
St. Louis	182	11.3	12.9	11	25	
St. Paul	46	9.6	12 6	0	5	0
Salt Lake City [5]	27	10.4	12.9	4	7	64
San Antonio	50	12.4	11.2	8	6	
San Diego	36	16.3	14.2	5	0	110
San Francisco	170	15.4	10.6	6	7	37
Schenectady	17	9.5	6.2	1	3	30
Seattle	71			5	3	53
Somerville	14	7.2	17.2	2	5	58
Spokane	24	11.5	13.9	3	2	72
Springfield, Mass	31	11.0	9.3	2	4	32
Syracuse	37	9.8	11.6	3	6	39
Toledo	58	9.9	15.7	3	11	29
Trenton	30	11.4	15.6	3	6	53
Utica	20	10.1	13.7	1	3	23
Washington, D. C	123	11.9	12.9	14	11	82
White	72		12.6	5	8	43
Colored	51	(6)	14.0	9	3	164
Waterbury	16			0	1	0
Wilmington, Del	36	14.9	10.9	4	1	99
Worcester	44	11.8	11.1	5	8	60
Yonkers	20	8.8	7.2	2	1	46
Youngstown	31	9.6	11.4	1	2	13

[5] Deaths for week ended Friday Nov. 4, 1927.

[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of total population. Atlanta 31, Baltimore 15, Birmingham 39, Dallas 15, Fort Worth 14, Houston 25, Indianapolis 11, Kansas City (Kans.) 14, Knoxville 15, Louisville 17, Memphis 38, Nashville 30, New Orleans 26, Richmond 32, and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended November 12, 1927

DIPHTHERIA

	Cases
Alabama	122
Arizona	17
Arkansas	30
California	129
Colorado	30
Connecticut	30
Delaware	2
Florida	33
Georgia	46
Idaho	2
Illinois	141
Indiana	54
Iowa [1]	26
Kansas	32
Louisiana	64
Maine	1
Maryland [1]	46
Massachusetts	109
Michigan	99
Minnesota	47
Mississippi	61
Missouri	65
Montana	1
Nebraska	21
New Jersey	142
New Mexico	1
New York	318
North Carolina	129
Ohio	304
Oklahoma [2]	92
Oregon	17
Pennsylvania	307
Rhode Island	19
South Carolina	84
South Dakota	5
Tennessee	48
Texas	121
Utah [1]	16
Washington	16
West Virginia	25
Wisconsin	85

[1] Week ended Friday.

INFLUENZA

	Cases
Alabama	41
Arkansas	59
California	14
Connecticut	6
Delaware	1
Florida	3
Georgia	68
Illinois	5
Indiana	26
Kansas	5
Louisiana	8
Maine	2
Maryland [1]	18
Massachusetts	6
Minnesota	2
Missouri	10
Nebraska	1
New Jersey	6
New York	13
Ohio	16
Oklahoma [2]	45
Oregon	5
South Carolina	485
South Dakota	4
Tennessee	38
Texas	47
Utah [1]	4
West Virginia	11
Wisconsin	23
Wyoming	1

MEASLES

	Cases
Alabama	15
Arizona	45
Arkansas	4
California	58
Colorado	11
Connecticut	25
Delaware	15
Florida	3
Georgia	12
Idaho	3

[2] Exclusive of Oklahoma City and Tulsa.

Reports for Week Ended November 12, 1927—Continued

MEASLES—continued	Cases
Illinois	9
Indiana	9
Kansas	30
Louisiana	10
Maine	53
Maryland [1]	25
Massachusetts	203
Michigan	116
Minnesota	3
Missouri	21
Nebraska	5
New Jersey	42
New Mexico	8
New York	156
North Carolina	448
Ohio	34
Oklahoma [2]	29
Oregon	15
Pennsylvania	414
Rhode Island	1
South Carolina	140
South Dakota	1
Tennessee	58
Texas	6
Washington	111
West Virginia	15
Wisconsin	61
Wyoming	16

MENINGOCOCCUS MENINGITIS	
California	5
Florida	2
Idaho	1
Illinois	5
Iowa [1]	1
Kansas	2
Massachusetts	3
Michigan	4
Minnesota	1
Missouri	2
Montana	1
New Jersey	1
New York	5
Ohio	5
Oklahoma [2]	2
Pennsylvania	2
Utah [1]	1
Washington	4
West Virginia	1
Wisconsin	6

POLIOMYELITIS	
Alabama	1
Arkansas	1
California	23
Colorado	6
Connecticut	3
Florida	2
Idaho	11
Illinois	18
Indiana	7

POLIOMYELITIS—continued	Cases
Iowa [1]	7
Kansas	3
Maine	7
Maryland [1]	2
Massachusetts	38
Michigan	8
Minnesota	2
Missouri	6
Montana	1
Nebraska	5
New Jersey	3
New Mexico	3
New York	18
Ohio	26
Oklahoma [2]	3
Oregon	22
Pennsylvania	27
Rhode Island	2
South Carolina	1
South Dakota	6
Tennessee	5
Texas	5
Virginia	1
Washington	26
West Virginia	8
Wisconsin	9
Wyoming	1

SCARLET FEVER	
Alabama	37
Arizona	2
Arkansas	18
California	109
Colorado	55
Connecticut	45
Delaware	1
Florida	3
Georgia	32
Idaho	16
Illinois	215
Indiana	121
Iowa [1]	65
Kansas	98
Louisiana	17
Maine	70
Maryland [1]	56
Massachusetts	215
Michigan	171
Minnesota	127
Mississippi	26
Missouri	82
Montana	16
Nebraska	22
New Jersey	88
New Mexico	11
New York	258
North Carolina	84
Ohio	202
Oklahoma [2]	30
Oregon	19
Pennsylvania	313

[1] Week ended Friday.

[2] Exclusive of Oklahoma City and Tulsa.

Reports for Week Ended November 12, 1927—Continued

SCARLET FEVER—continued	Cases
Rhode Island	14
South Carolina	36
South Dakota	20
Tennessee	37
Texas	68
Utah [1]	14
Washington	47
West Virginia	84
Wisconsin	94
Wyoming	7

SMALLPOX	
Alabama	1
Arkansas	2
California	6
Colorado	6
Florida	5
Idaho	1
Illinois	45
Indiana	65
Iowa [1]	54
Kansas	37
Louisiana	3
Massachusetts	1
Michigan	21
Minnesota	1
Mississippi	1
Missouri	52
Montana	3
Nebraska	6
New York	6
North Carolina	14
Ohio	6
Oklahoma [2]	2
Oregon	5
South Carolina	7
South Dakota	3
Tennessee	1
Texas	12
Utah [1]	9
Washington	24
West Virginia	5
Wisconsin	19

TYPHOID FEVER	Cases
Alabama	18
Arizona	5
Arkansas	17
California	9
Colorado	6
Connecticut	3
Florida	5
Georgia	80
Idaho	1
Illinois	32
Indiana	10
Iowa [1]	2
Kansas	9
Louisiana	11
Maine	6
Maryland [1]	22
Massachusetts	6
Michigan	20
Minnesota	8
Mississippi	6
Missouri	16
Nebraska	3
New Jersey	5
New Mexico	8
New York	56
North Carolina	10
Ohio	34
Oklahoma [2]	89
Oregon	11
Pennsylvania	35
Rhode Island	1
South Carolina	30
South Dakota	4
Tennessee	25
Texas	16
Utah [1]	1
Washington	1
West Virginia	18
Wisconsin	3
Wyoming	1

[1] Week ended Friday.
[2] Exclusive of Oklahoma City and Tulsa

Reports for Week Ended November 5, 1927

DIPHTHERIA	Cases
District of Columbia	20
North Dakota	4

INFLUENZA	
District of Columbia	1

POLIOMYELITIS	
North Dakota	1
Ohio	54

SCARLET FEVER	Cases
District of Columbia	24
North Dakota	35

SMALLPOX	
District of Columbia	1
North Dakota	3

TYPHOID FEVER	
District of Columbia	2
North Dakota	1

Reports for week ended October 29, 1927

DIPHTHERIA	Cases
Colorado	22
North Dakota	7

MEASLES	
Colorado	1
North Dakota	1

MENINGOCOCCUS MENINGITIS	
Colorado	1

POLIOMYELITIS	
Colorado	6
North Dakota	2

SCARLET FEVER	Cases
Colorado	43
North Dakota	33

SMALLPOX	
North Dakota	12

TYPHOID FEVER	
Colorado	12
North Dakota	1

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
April, 1927										
Indiana	0	152	226		1,283		0	992	872	16
June, 1927										
Indiana	1	98	14		388		1	368	487	18
September, 1927										
Hawaii Territory	3	25	5		26		0		0	10
New Hampshire	0	8	48				18	17	0	3
Washington	10	63	10		112		59	71	37	41
October, 1927										
Arizona	0	50	1		8		17	10	0	21
Connecticut	5	143	11	1	47		42	114	0	18
Massachusetts	4	432	33	1	526	2	377	728	0	48
Nebraska	2	60	7		6		49	168	8	12

April, 1927

	Cases
Indiana:	
Chicken pox	731
Mumps	10
Whooping cough	272

June, 1927

Indiana:	
Chicken pox	236
Mumps	9
Whooping cough	221

September, 1927

	Cases
Chicken pox:	
Hawaii Territory	5
Washington	72
Conjunctivitis (follicular):	
Hawaii Territory	81
Dysentery:	
Washington	1
German measles:	
Washington	14
Impetigo contagiosa:	
Washington	3
Leprosy:	
Hawaii Territory	5
Lethragic encephalitis:	
Washington	5
Mumps:	
Washington	75
Paratyphoid fever:	
Washington	2
Scabies:	
Washington	12
Tetanus:	
Hawaii Territory	3
Washington	1
Trachoma:	
Hawaii Territory	47
Vincent's angina:	
Washington	2
Whooping cough:	
Hawaii Territory	12
Washington	52

October, 1927

	Cases
Actinomycosis:	
Massachusetts	1
Anthrax:	
Connecticut	1
Chicken pox:	
Arizona	11
Connecticut	220
Massachusetts	412
Nebraska	80
Conjunctivitis (infectious):	
Connecticut	2
Dysentery (bacillary):	
Connecticut	2
German measles:	
Connecticut	6
Massachusetts	24
Lead poisoning:	
Massachusetts	3
Lethargic encephalitis:	
Connecticut	2
Massachusetts	5
Mumps:	
Arizona	6
Connecticut	66
Massachusetts	181
Nebraska	44
Ophthalmia neonatorum:	
Arizona	1
Massachusetts	168
Paratyphoid fever:	
Connecticut	2
Rabies in animals:	
Connecticut	8

October, 1927—Continued

Rabies in man:	**Cases**
Massachusetts	1
Septic sore throat:	
Connecticut	5
Massachusetts	2
Nebraska	5
Tetanus:	
Connecticut	1
Massachusetts	4

October, 1927—Continued

Trachoma:	**Cases**
Arizona	7
Trichinosis:	
Connecticut	1
Whooping cough:	
Arizona	3
Connecticut	157
Massachusetts	341
Nebraska	32

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 101 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,960,000. The estimated population of of the 95 cities reporting deaths is more than 30,290,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended October 29, 1927, and October 30, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
40 States	2,590	2,634	
101 cities	1,160	1,241	1,187
Measles:			
39 States	1,506	2,494	
101 cities	418	371	
Poliomyelitis:			
41 States	399	65	
Scarlet fever:			
40 States	2,695	,956	
101 cities	865	985	801
Smallpox:			
41 States	289	199	
101 cities	42	17	33
Typhoid fever:			
40 States	698	967	
101 cities	100	159	127
Deaths reported			
Influenza and pneumonia:			
101 cities	573	611	
Smallpox:			
101 cities	1	0	
Salt Lake City	1	0	

City reports for week ended October 29, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	5	2	1	0	0	0	0	0
New Hampshire:									
Concord	22,546	0	1	0	0	0	1	0	0
Manchester	83,097	0	3	0	0	0	0	0	2
Vermont:									
Barre	10,008	0	0	0	0	0	0	0	0
Massachusetts:									
Boston	779,620	31	45	22	2	0	74	4	8
Fall River	128,993	0	4	3	0	0	0	0	3
Springfield	142,065	2	3	3	0	0	0	0	1
Worcester	190,757	9	6	8	2	0	1	11	1
Rhode Island:									
Pawtucket	69,760	0	1	0	0	0	1	6	2
Providence	267,918	3	7	13	0	0	1	2	6
Connecticut:									
Bridgeport	(1)	0	10	3	0	0	1	0	3
Hartford	160,197	3	6	5	0	0	2	1	2
New Haven	178,927	5	3	0	1	0	1	15	2
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	26	16	18	------	1	11	12	9
New York	5,873,356	------	135	216	15	4	14	24	113
Rochester	316,786	6	11	3	------	1	1	0	4
Syracuse	182,003	12	10	2	------	0	9	2	1
New Jersey:									
Camden	128,642	10	9	5	0	0	0	14	3
Newark	452,513	12	11	24	0	1	5	25	6
Trenton	132,020	0	3	1	0	0	1	1	3
Pennsylvania:									
Philadelphia	1,979,364	27	69	61	------	0	3	26	30
Pittsburgh	631,563	14	30	56	------	2	101	7	16
Reading	112,707	8	3	1	------	0	1	0	1
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	2	15	5	0	1	2	0	6
Cleveland	936,485	49	50	115	3	1	2	39	10
Columbus	279,836	5	9	11	0	0	0	1	5
Toledo	287,380	15	14	3	2	2	6	3	3
Indiana:									
Fort Wayne	97,846	1	4	12	0	0	0	0	3
Indianapolis	358,819	11	14	10	0	0	2	23	9
South Bend	80,091	0	3	1	0	0	0	0	1
Terre Haute	71,071	0	2	1	0	0	0	0	2
Illinois:									
Chicago	2,995,239	67	107	95	7	3	7	26	50
Springfield	63,923	0	4	1	0	0	0	1	1

[1] No estimate made.

City reports for week ended October 29, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL—continued									
Michigan:									
Detroit	1,245,824	35	75	96	3	0	11	15	20
Flint	130,316	6	12	9	0	0	0	0	4
Grand Rapids	153,698	10	6	0	0	2	0	0	2
Wisconsin									
Kenosha	50,891	21	2	0	1	0	0	2	0
Madison	46,385	1	1	2	0	0	0	0	1
Milwaukee	509,192	45	29	15	1	1	2	11	8
Racine	67,707	2	3	4	1	0	1	0	1
Superior	39,671	0	1	0	0	0	0	0	1
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	0	3	0	0	0	0	0	4
Minneapolis	425,435	45	34	11	0	2	1	4	11
St. Paul	246,001	22	19	6	0	0	3	11	8
Iowa:									
Davenport	52,469	0	2	2	0	-------	0	0	-------
Des Moines	141,441	0	8	1	0	-------	0	0	4
Sioux City	76,411	17	3	0	0	-------	3	12	-------
Waterloo	36,771	2	1	0	0	-------	0	1	-------
Missouri:									
Kansas City	367,481	7	13	8	0	1	3	6	7
St Joseph	78,342	4	4	0	0	0	0	0	0
St. Louis	821,543	8	51	38	0	0	4	2	-------
North Dakota.									
Fargo	26,403	9	0	0	0	0	0	2	0
Grand Forks	14,811	27	0	0	0	-------	0	0	-------
South Dakota.									
Aberdeen	15,036	1	0	0	0	-------	0	0	-------
Sioux Falls	30,127	0	0	2	0	-------	0	0	-------
Nebraska.									
Lincoln	60,941	3	3	2	0	0	0	6	0
Omaha	211,768	23	11	0	0	0	1	0	1
Kansas.									
Topeka	55,411	5	2	4	0	0	1	0	1
Wichita	88,367	7	6	3	0	0	1	0	1
SOUTH ATLANTIC									
Delaware.									
Wilmington	122,049	0	4	1	0	0	0	0	3
Maryland									
Baltimore	796,296	28	31	21	9	4	12	1	18
Cumberland	33,741	0	1	1	0	0	0	0	0
Frederick	12,035	0	0	0	0	0	0	0	0
District of Columbia:									
Washington	497,906	9	18	25	0	0	3	0	7
Virginia.									
Lynchburg	30,395	2	3	8	0	0	0	1	0
Norfolk	(1)	14	4	7	0	0	0	0	3
Richmond	186,403	1	25	12	0	0	5	1	2
Roanoke	58,208	2	7	4	0	2	0	0	1
West Virginia:									
Charleston	49,019	0	3	1	2	0	0	0	1
Wheeling	56,208	10	3	0	0	0	1	0	0
North Carolina.									
Raleigh	30,371	8	4	3	0	0	0	0	0
Wilmington	37,061	0	1	0	0	0	5	0	0
Winston-Salem	69,031	1	4	4	0	0	0	2	2
South Carolina:									
Charleston	73,125	5	1	0	39	0	1	0	3
Columbia	41,225	1	3	1	0	-------	8	0	1
Greenville	27,311	0	2	2	0	0	1	3	0
Georgia:									
Atlanta	(1)	1	12	11	27	1	1	0	5
Brunswick	16,809	0	0	0	0	0	0	3	0
Savannah	93,134	1	3	2	5	0	22	1	2
Florida:									
Miami	69,754	0	-------	3	0	0	0	3	0
St. Petersburg	26,847	-------	0	-------	-------	0	-------	-------	0
Tampa	94,743	1	2	3	2	0	0	0	1

[1] No estimate made.

City reports for week ended October 29, 1927—Continued

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	3	0	0	0	0	0	0
Louisville	305,935	0	11	4	1	0	0	0	10
Tennessee:									
Memphis	174,533	0	12	7	0	2	37	0	3
Nashville	136,220	4	6	6	0	3	0	3	6
Alabama:									
Birmingham	205,670	0	7	24	8	1	2	0	3
Mobile	65,955	0	2	3	1	2	0	0	0
Montgomery	46,481	1	3	7	0	0	1	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	1	2	5	0		1	0	
Little Rock	74,216	0	3	0	0	2	0	0	2
Louisiana:									
New Orleans	414,493	2	11	12	4	2	2	0	22
Shreveport	57,857	0	1	4	0	0	0	0	4
Oklahoma:									
Oklahoma City	(1)	0	4	12	0	0	2	0	2
Tulsa	124,478	1		2	0		0	1	
Texas:									
Dallas	194,450	1	13	32	0	0	0	0	3
Galveston	48,375	0	1	1	0	0	0	0	1
Houston	164,954	0	5	9	0	0	0	3	3
San Antonio	198,069	0	2	8	0	0	2	0	9
MOUNTAIN									
Montana:									
Billings	17,971	0	0	0	0	0	1	0	0
Great Falls	29,883	0	1	0	0	0	0	0	0
Helena	12,037	2	0	0	0	0	1	0	1
Missoula	12,668	6	1	1	0	0	0	0	0
Idaho:									
Boise	23,042	0	0	0	0	0	1	1	0
Colorado:									
Denver	280,911	10	16	4		3	3	5	6
Pueblo	43,787	1	4	1	0	0	0	0	3
New Mexico:									
Albuquerque	21,000	1	0	0	0	0	1	1	0
Utah:									
Salt Lake City	130,948	19	4	5	0	0	1	1	6
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	(1)	16	8	10	0		17	3	
Spokane	108,897	19	4	1	0		0	1	
Tacoma	104,455	0	4	2	0	0	0	0	1
Oregon:									
Portland	282,383	16	12	9	1	1	6	0	6
California:									
Los Angeles	(1)	20	44	34	11	2	5	2	18
Sacramento	72,260	4	2	0	0	0	2	0	2
San Francisco	557,530	29	18	11	0	1	11	7	7

[1] No estimate made.

City reports for week ended October 29, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
NEW ENGLAND											
Maine:											
Portland	0	2	0	0	0	1	1	0	0	0	11
New Hampshire:											
Concord	1	1	0	0	0	0	0	0	0	0	5
Manchester	1	2	0	0	0	0	0	0	0	0	13
Vermont:											
Barre	0	0	0	0	0	0	0	0	0	0	-------
Massachusetts:											
Boston	35	52	0	0	0	19	3	2	1	33	-------
Fall River	2	6	0	0	0	4	1	4	0	0	28
Springfield	5	5	0	0	0	2	0	1	0	0	30
Worcester	9	5	0	0	0	2	0	0	0	0	36
Rhode Island:											
Pawtucket	0	0	0	0	0	0	0	0	0	0	21
Providence	4	11	0	4	0	3	1	0	0	2	77
Connecticut:											
Bridgeport	5	6	0	0	0	1	0	0	0	0	21
Hartford	4	2	0	0	0	0	0	0	0	3	34
New Haven	5	1	0	0	0	2	1	1	0	5	43
MIDDLE ATLANTIC											
New York:											
Buffalo	15	26	1	0	0	3	1	0	0	14	137
New York	72	73	0	0	0	[1] 82	21	18	1	125	1,304
Rochester	6	5	0	0	0	2	1	1	1	1	68
Syracuse	7	4	0	0	0	1	1	0	0	5	39
New Jersey:											
Camden	4	3	0	0	0	2	0	2	0	0	33
Newark	10	13	0	0	0	12	1	0	0	24	117
Trenton	1	0	0	0	0	1	0	0	0	0	30
Pennsylvania											
Philadelphia	50	39	0	0	0	30	8	3	1	24	435
Pittsburgh	34	30	0	0	0	12	2	1	1	17	191
Reading	1	4	0	0	0	2	0	0	0	1	30
EAST NORTH CENTRAL											
Ohio.											
Cincinnati	11	10	1	0	0	8	0	4	0	0	124
Cleveland	22	17	0	0	0	14	2	5	1	6	169
Columbus	8	18	1	0	0	6	1	0	1	2	74
Toledo	10	16	1	0	0	3	2	3	0	2	57
Indiana:											
Fort Wayne	1	3	0	0	0	0	0	2	0	1	20
Indianapolis	9	20	1	0	0	0	1	0	0	1	87
South Bend	3	3	0	0	0	0	0	0	0	1	14
Terre Haute	3	1	0	0	0	2	1	0	0	3	17
Illinois:											
Chicago	80	70	1	0	0	49	6	2	0	79	702
Springfield	2	2	0	0	0	0	1	0	0	1	20
Michigan											
Detroit	62	56	1	0	0	25	5	6	0	59	292
Flint	9	20	1	0	0	1	0	0	0	3	35
Grand Rapids	8	5	0	0	0	0	0	0	0	0	22
Wisconsin:											
Kenosha	2	2	1	0	0	0	0	0	0	0	8
Madison	1	2	1	0	0	0	0	0	0	0	8
Milwaukee	19	15	2	0	0	7	0	0	0	12	103
Racine	4	2	0	0	0	2	0	1	0	1	10
Superior	2	5	1	0	0	0	0	0	0	0	13
WEST NORTH CENTRAL											
Minnesota:											
Duluth	6	7	1	0	0	3	0	0	0	4	28
Minneapolis	40	37	1	0	0	7	1	0	0	0	111
St. Paul	17	17	2	1	0	5	1	1	1	6	63
Iowa:											
Davenport	0	0	0	0	-------	-------	0	1	-------	0	-------
Des Moines	8	19	0	22	-------	-------	0	3	-------	0	-------
Sioux City	3	3	0	0	-------	-------	0	0	-------	0	-------
Waterloo	2	4	0	0	-------	-------	0	0	-------	0	-------

[1] Pulmonary tuberculosis only.

City reports for week ended October 29, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
WEST NORTH CENTRAL—continued											
Missouri:											
Kansas City	10	19	0	1	0	9	2	1	0	5	86
St. Joseph	4	2	0	22	0	0	0	1	1	0	21
St. Louis	32	19	0	1	0	18	4	4	0	25	255
North Dakota:											
Fargo	2	2	0	0	0	0	0	0	0	5	9
Grand Forks	1	2	0	0	--------	--------	0	0	--------	0	--------
South Dakota:											
Aberdeen	1	2	0	0	--------	--------	0	0	--------	0	--------
Sioux Falls	1	8	0	0	--------	--------	0	0	--------	0	7
Nebraska:											
Lincoln	1	6	0	0	0	0	0	0	0	3	18
Omaha	4	3	1	0	0	0	0	0	0	0	42
Kansas:											
Topeka	4	5	0	0	0	0	0	1	0	6	10
Wichita	4	7	1	1	0	1	0	0	0	2	21
SOUTH ATLANTIC											
Delaware:											
Wilmington	5	3	0	0	0	0	1	0	0	0	25
Maryland:											
Baltimore	13	9	0	0	0	16	7	4	0	28	224
Cumberland	0	0	0	0	0	1	1	0	0	0	7
Frederick	1	2	0	0	0	0	0	0	0	0	4
District of Col.:											
Washington	14	16	0	0	0	13	3	0	0	3	128
Virginia:											
Lynchburg	1	0	0	0	0	0	1	0	0	4	6
Norfolk	2	5	0	0	0	4	1	0	0	5	--------
Richmond	9	11	0	0	0	2	1	1	0	2	48
Roanoke	3	2	0	0	0	0	1	0	0	0	17
West Virginia:											
Charleston	1	5	0	0	0	1	0	1	0	1	10
Wheeling	3	1	0	0	0	0	1	0	0	0	13
North Carolina:											
Raleigh	3	2	0	0	0	0	1	0	0	1	10
Wilmington	1	3	0	0	0	0	1	0	0	1	13
Winston-Salem	2	12	1	0	0	1	0	0	0	4	19
South Carolina:											
Charleston	1	1	0	0	0	1	1	3	1	4	25
Columbia	0	2	0	0	--------	1	0	0	--------	1	12
Greenville	0	1	0	0	0	0	1	0	0	3	5
Georgia:											
Atlanta	7	15	0	0	0	5	1	1	2	0	71
Brunswick	0	0	0	0	0	0	0	0	0	0	3
Savannah	0	1	0	0	0	3	1	1	0	0	32
Florida:											
Miami	--------	1	--------	0	0	1	--------	4	0	0	17
St. Petersburg	0	--------	0	--------	0	0	0	--------	0	--------	11
Tampa	0	2	1	0	0	2	0	1	0	1	19
EAST SOUTH CENTRAL											
Kentucky:											
Covington	2	2	0	0	0	2	0	0	0	0	--------
Louisville	5	5	0	0	0	3	2	0	0	0	83
Tennessee:											
Memphis	5	10	0	0	0	1	3	0	0	0	60
Nashville	4	5	1	0	0	3	3	[1] 4	0	2	59
Alabama:											
Birmingham	4	4	0	1	0	3	2	5	1	0	52
Mobile	1	1	0	0	0	1	0	0	0	0	19
Montgomery	1	0	0	0	0	0	0	0	0	3	--------
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	0	0	0	--------	--------	1	0	--------	0	--------
Little Rock	2	5	0	0	0	3	1	0	0	0	--------
Louisiana:											
New Orleans	4	2	0	0	0	6	3	5	1	1	142
Shreveport	0	4	0	0	0	0	1	0	0	0	30

[1] In addition to 22 cases in delayed reports.

City reports for week ended October 29, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST SOUTH CENTRAL—continued											
Oklahoma:											
Oklahoma City	2	2	0	5	0	0	0	2	0	0	27
Tulsa	-------	1	-------	0	-------	-------	-------	1	-------	4	-------
Texas:											
Dallas	4	14	0	0	0	2	2	0	0	7	52
Galveston	0	0	0	0	0	0	1	0	0	0	7
Houston	2	4	1	0	0	5	0	0	0	0	55
San Antonio	0	1	0	0	0	6	1	4	0	0	66
MOUNTAIN											
Montana:											
Billings	1	0	0	0	0	0	0	0	0	4	8
Great Falls	1	3	1	4	0	0	0	0	0	1	8
Helena	0	1	0	0	0	1	0	0	0	0	5
Missoula	1	0	1	0	0	0	1	0	0	0	5
Idaho:											
Boise	0	0	0	0	0	0	0	0	0	0	3
Colorado:											
Denver	8	8	1	0	0	9	1	1	0	0	74
Pueblo	1	2	0	0	0	1	0	1	0	0	10
New Mexico:											
Albuquerque	0	2	0	0	0	1	1	0	0	0	5
Utah:											
Salt Lake City	2	2	0	1	1	0	2	1	0	7	30
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	3
PACIFIC											
Washington:											
Seattle	8	1	2	0	-------	-------	0	0	-------	1	-------
Spokane	8	6	2	5	-------	-------	1	5	-------	0	-------
Tacoma	3	2	2	0	0	0	0	0	0	0	21
Oregon:											
Portland	9	3	3	4	0	2	1	0	0	0	58
California:											
Los Angeles	15	15	3	0	0	20	3	0	0	10	223
Sacramento	1	0	0	0	0	4	1	0	0	0	20
San Francisco	8	13	0	1	0	7	1	1	0	16	156

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Boston	1	0	1	0	0	0	1	25	5
Fall River	0	0	0	0	0	0	0	4	0
Springfield	0	0	0	0	0	0	0	1	0
Rhode Island:									
Providence	0	0	0	0	0	0	0	3	2
Connecticut:									
Bridgeport	0	0	1	1	0	0	0	0	0
MIDDLE ATLANTIC									
New York:									
New York	1	2	3	5	0	0	9	14	2
New Jersey:									
Camden	0	0	0	0	0	0	0	1	0
Trenton	0	0	0	0	0	1	0	0	0
Pennsylvania:									
Philadelphia	2	1	0	0	0	1	1	5	0
Pittsburgh	0	0	0	0	0	0	0	2	0
Reading	0	0	0	0	0	0	0	2	0

City reports for week ended October 29, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases estimated expectancy	Cases	Deaths
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	0	0	0	0	0	0	1	7	2
Cleveland	2	0	0	0	0	0	1	3	0
Columbus	0	0	0	1	0	0	0	0	0
Toledo	0	0	0	0	0	0	1	3	0
Indiana:									
Fort Wayne	0	0	0	0	0	0	0	2	0
Indianapolis	0	0	0	0	0	0	0	1	1
Illinois:									
Chicago	4	3	1	0	1	1	2	9	2
Michigan.									
Detroit	0	1	0	0	0	0	1	6	2
Grand Rapids	0	0	0	0	0	0	0	1	0
Wisconsin									
Madison	1	0	0	0	0	0	0	0	0
Milwaukee	3	2	0	0	0	0	0	1	1
Racine	1	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	1	0	1	0	0	0	1	1	0
Iowa:									
Waterloo	0	-------	0	-------	0	-------	0	1	-------
Missouri:									
Kansas City	0	0	0	0	0	0	0	1	0
St. Joseph	1	0	0	0	0	0	0	0	0
St. Louis	1	1	0	0	0	0	1	2	1
North Dakota:									
Fargo	0	1	0	0	0	0	0	0	0
Nebraska									
Omaha	0	0	0	0	0	0	0	4	0
SOUTH ATLANTIC									
Maryland.									
Baltimore	0	0	1	2	0	0	1	4	0
District of Columbia.									
Washington	0	0	0	0	0	0	0	1	1
Virginia:									
Lynchburg	0	0	0	0	0	1	0	0	0
Richmond	0	0	0	0	0	0	1	1	0
West Virginia:									
Charleston	0	0	0	0	0	0	0	1	0
Wheeling	0	0	0	0	0	0	0	2	0
North Carolina:									
Raleigh	0	0	0	0	0	3	0	0	0
Winston-Salem	0	0	0	0	3	2	0	0	0
South Carolina:									
Charleston [1]	0	0	0	0	2	0	0	0	0
Columbia	0	0	0	0	0	2	0	0	0
Georgia:									
Brunswick	0	0	0	0	0	1	0	0	0
Savannah [2]	0	0	0	0	0	1	0	1	0
Florida:									
Tampa	0	0	0	0	0		0	1	0
EAST SOUTH CENTRAL									
Tennessee:									
Nashville	0	2	0	0	0	0	0	1	0
Alabama:									
Birmingham	0	0	0	0	2	0	0	0	0
Montgomery	0	0	0	0	1	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	1	0	0	0
Louisiana:									
New Orleans	0	0	0	0	2	0	0	0	0
Shreveport	0	0	0	1	0	1	0	1	0
Texas:									
Dallas	1	1	1	1	1	1	0	6	1
Houston	0	0	0	0	0	0	0	1	0

[1] Dengue: 10 cases at Charleston, S. C.

[2] Typhus fever: 6 cases at Savannah, Ga.

City reports for week ended October 29, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Csaes	Deaths	Cases, estimated expectancy	Cases	Deaths
MOUNTAIN									
Idaho:									
Boise	0	0	0	0	0	0	0	1	0
Colorado:									
Denver	6	3	0	0	0	0	0	4	
Utah:									
Salt Lake City	0	0	0	0	0	0	0	2	0
Nevada:									
Reno	1	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	0	--------	0	--------	0	--------	1	3	--------
Spokane	1	--------	0	--------	0	--------	0	6	--------
Tacoma	0	0	0	0	0	0	0	6	0
Oregon:									
Portland	0		1	0	0	0	0	6	1
California:									
Los Angeles	0	0	1	1	2	0	1	4	0
Sacramento	0	0	0	0	0	0	0	1	0
San Francisco	2	0	1	1	0	0	0	2	1

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended October 29, 1927, compared with those for a like period ended October 30, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, September 25 to October 29, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927
101 cities	127	130	159	143	165	144	203	170	213	195
New England	66	109	66	132	85	128	85	123	106	135
Middle Atlantic	81	123	119	129	100	123	122	143	138	191
East North Central	133	130	188	158	218	138	260	199	241	232
West North Central	143	123	177	145	210	119	240	129	264	139
South Atlantic	162	165	214	170	216	203	300	191	354	192
East South Central	269	66	253	153	269	158	398	168	383	260
West South Central	210	197	176	197	219	256	279	268	331	298
Mountain	292	189	173	126	164	198	255	153	155	99
Pacific	174	120	198	99	174	154	190	220	204	152

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926, and 1927, respectively.

Summary of weekly reports from cities, September 25 to October 29, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

MEASLES CASE RATES

	Week ended—									
	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927
101 cities	37	25	31	40	43	50	49	55	64	70
New England	21	53	33	118	26	132	26	186	24	190
Middle Atlantic	10	33	11	56	9	53	12	64	13	72
East North Central	25	13	29	11	36	17	50	21	77	18
West North Central	10	6	26	12	44	14	42	22	85	34
South Atlantic	13	29	15	31	20	69	26	45	9	107
East South Central	5	20	5	56	0	127	21	51	21	204
West South Central	0	4	0	8	13	55	4	88	0	21
Mountain	109	0	109	27	237	18	337	72	392	63
Pacific	327	47	179	45	289	58	276	50	340	92

SCARLET FEVER CASE RATES

	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927
101 cities	100	84	111	103	129	96	152	117	169	146
New England	104	102	144	139	144	130	193	151	245	211
Middle Atlantic	51	59	57	101	62	63	51	74	92	97
East North Central	98	101	120	102	132	108	155	128	157	166
West North Central	198	79	216	107	319	175	373	137	355	248
South Atlantic	110	107	99	123	125	91	162	161	132	168
East South Central	98	117	145	66	145	82	222	148	331	138
West South Central	69	105	69	67	86	88	95	80	112	126
Mountain	319	36	301	126	264	108	447	279	365	144
Pacific	174	76	158	76	204	97	233	136	286	97

SMALLPOX CASE RATES

	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927
101 cities	1	4	3	5	4	6	3	7	3	7
New England	0	0	0	0	0	0	0	0	0	9
Middle Atlantic	0	0	0	0	0	0	0	0	0	0
East North Central	0	1	1	1	3	5	3	0	1	0
West North Central	2	12	2	14	6	26	0	42	2	52
South Atlantic	4	4	0	4	4	2	9	7	6	0
East South Central	0	0	10	0	0	0	10	5	5	5
West South Central	0	8	4	4	4	4	0	0	4	0
Mountain	9	54	9	54	9	72	0	72	9	45
Pacific	5	24	19	31	32	16	16	21	21	16

TYPHOID FEVER CASE RATES

	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927
101 cities	42	19	33	25	32	19	26	20	27	17
New England	17	12	17	23	57	16	19	16	12	19
Middle Atlantic	28	18	27	21	26	16	20	15	14	12
East North Central	33	8	23	17	16	18	12	16	17	18
West North Central	40	20	22	28	14	22	22	22	24	16
South Atlantic	114	20	76	47	65	27	76	83	75	22
East South Central	129	117	145	20	140	81	98	81	140	46
West South Central	47	17	21	71	26	29	21	29	39	38
Mountain	82	36	64	54	46	63	27	81	46	27
Pacific	19	18	21	8	16	8	13	16	19	16

Summary of weekly reports from cities, September 25 to October 29, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued.

INFLUENZA DEATH RATES

	Week ended—									
	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927
95 cities	6	6	4	5	6	6	7	9	11	8
New England	2	0	0	5	5	2	7	5	7	0
Middle Atlantic	2	4	3	6	4	8	8	7	8	4
East North Central	5	5	2	1	2	3	5	5	14	5
West North Central	0	8	6	4	11	2	2	12	2	6
South Atlantic	9	4	6	4	8	7	8	11	21	13
East South Central	10	25	5	10	16	10	10	25	10	41
West South Central	35	22	13	9	13	13	13	13	26	17
Mountain	18	27	18	45	27	9	27	18	9	27
Pacific	7	7	0	3	11	3	0	14	7	10

PNEUMONIA DEATH RATES

	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927
95 cities	69	56	64	65	77	71	86	77	96	91
New England	87	58	33	81	75	95	83	86	99	65
Middle Atlantic	71	62	76	71	88	72	104	75	101	92
East North Central	59	41	54	58	62	49	61	66	86	82
West North Central	70	33	63	42	53	60	49	64	63	69
South Atlantic	66	66	61	57	89	108	113	72	108	88
East South Central	109	87	83	82	52	46	98	127	134	112
West South Central	66	95	88	69	106	69	53	86	88	190
Mountain	155	81	55	72	118	117	128	144	182	144
Pacific	28	45	53	69	81	83	99	100	88	97

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

THE FAR EAST

Report for week ended October 22, 1927.—The following report for the week ended October 22, 1927, was transmitted by the eastern bureau of the health section of the secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Plague, cholera, or smallpox was reported present in the following ports:

PLAGUE

Ceylon.—Colombo.
India.—Bombay (last case Oct. 8, 1927), Rangoon.
Siam.—Bangkok.

CHOLERA

Iraq.—Basra.
India.—Rangoon.

CHOLERA—continued

Siam.—Bangkok.
China.—Canton, Shanghai (International Settlement).

SMALLPOX

India.—Bombay, Rangoon, Tuticorin.
Dutch East Indies.—Banjermasin, Samarinda.

Reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Aden Protectorate.—Perim, Kamaran, Aden.
Arabia.—Bahrein.
Persia.—Bender-Abbas, Mohammerah (last case of cholera, August 31, 1927), Abadan (last case of cholera, August 31, 1927), Bushire.
India.—Chittagong (last case of cholera, August 13, 1927), Cochin, Vizagapatam, Moulmein, Bassein (last case of plague, October 8, 1927; last case of cholera, July 23, 1927), Negapatam (last case of cholera, August 20, 1927).
Portuguese India.—Nova Goa.
Federated Malay States.—Port Swettenham.
Straits Settlements.—Penang, Singapore (last case of plague, August 30, 1927; last case of cholera, October 15, 1927).
Dutch East Indies.—Batavia, Semarang (last case of plague, January 8, 1927), Cheribon, Padang, Belawan-Deli, Tarakan, Palembang, Menado, Sabang, Surabaya (last case of plague, April 16, 1927), Makassar (last case of plague, August 27, 1927), Balik-Papan, Medan.
Sarawak.—Kuchin.
British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.
Portuguese Timor.—Dilly.
Philippine Islands.—Manila (last case of cholera, September 3, 1927), Iloilo, Jolo, Cebu, Zamboanga.
French Indo-China.—Saigon and Cholon (last case of plague, September 17, 1927; last case of cholera, October 8, 1927), Tourane (last case of cholera, October 1, 1927), Haiphong (last case of cholera, August 20, 1927).
China.—Tsingtao, Chinwang-Tao (last case of cholera, October 8, 1927), Tien-Tsin (last case of cholera, October 1, 1927), Newchang (last case of cholera, September 24, 1927), Swatow (last case of cholera, October 8, 1927), Amoy (last case of cholera, October 15, 1927).
Hong Kong.
Macao.—(Last case of cholera, October 8, 1927.)
Wei-hai-wei.
Formosa.—Keelung, Takao.
Chosen.—Chemulpo, Fusan.
Manchuria.—Yingkow (last case of cholera, September 11, 1927), Antung, Harbin, Mukden, Changchun.
Kwantung.—Port Arthur, Dairen (last case of cholera, September 24, 1927).
Japan.—Nagasaki, Yokohama, Niigati, Shimonoseki, Tsuruga, Kobe, Osaka, Hakodate, Moji.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns.
New Guinea.—Port Moresby.
New Britain Mandated Territory.—Rabaul and Kokopo.
New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.
Western Samoa.—Apia.
New Caledonia.—Noumea.
Fiji.—Suva.
Hawaii.—Honolulu.
Society Islands.—Papeete.

AFRICA

Egypt.—Alexandria (last case of plague, August 27, 1927), Port Said (last case of plague, July 19, 1927), Suez (last case of plague, September 3, 1927).

Anglo-Egyptian Sudan.—Port Sudan, Suakin.

Eritrea.—Massaua.

French Somaliland.—Djibouti.

British Somaliland.—Berbera.

Italian Somaliland.—Mogadiscio.

Kenya.—Mombasa (last case of plague July 30, 1927).

Zanzibar.—Zanzibar.

Tanganyika.—Dar es Salaam.

Seychelles.—Victoria.

Mozambique.—Mozambique, Beira, Lourenço-Marques.

Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.

Mauritius.—Port Louis (last case of plague September 16, 1927).

Reunion.—St. Denis (last case of plague January 22, 1927).

Madagascar.—Majunga, Diego-Suarez (last case of plague January 31, 1927), Tamatave (last case of plague March 5, 1927).

AMERICA

Panama.—Colon, Panama.

Returns for the week ended October 22, 1927, were not received from the following ports:

India.—Calcutta (last case of plague April 30, 1927; ast case of cholera, October 15, 1927), Karachil (last case of cholera June 4, 1927), Madras (last case of cholera, October 15, 1927).

Dutch East Indies.—Pontianak.

Union of Socialist Soviet Republics.—Vladivostok.

AZORES

Plague—St. Michaels—September 4–October 1, 1927.—During the three-week period ended October 1, 1927, three cases of plague with one death were reported in the Azores, one case occurring at Arrifes and one at San Antonio, 3 and 9 miles, respectively, from the port.

CANADA

Communicable diseases—Week ended October 29, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases from seven Provinces of Canada for the week ended October 29, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Influenza	5			6	3			14
Poliomyelitis		3	2	4			7	16
Smallpox				64	3	5	6	78
Typhoid fever	8	38	20	14	1	3	1	85

Communicable diseases—Quebec—Week ended October 29, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended October 29, 1927, as follows:

Disease	Cases	Disease	Cases
Chicken pox	16	Scarlet fever	66
Diphtheria	98	Smallpox	7
German measles	4	Tuberculosis	45
Influenza	3	Typhoid fever	20
Measles	78	Whooping cough	15
Poliomyelitis	2		

Typhoid fever—Montreal—January 2–November 5, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	June 11, 1927	128	36
Jan. 15, 1927	4	3	June 18, 1927	86	18
Jan. 22, 1927	1	2	June 25, 1927	75	23
Jan. 29, 1927	3	1	July 2, 1927	66	21
Feb. 5, 1927	1	0	July 9, 1927	52	10
Feb. 12, 1927	0	0	July 16, 1927	39	4
Feb. 19, 1927	1	2	July 23, 1927	22	9
Feb. 26, 1927	1	1	July 30, 1927	23	10
Mar. 5, 1927	9	1	Aug. 6, 1927	16	5
Mar. 12, 1927	203	4	Aug. 13, 1927	20	5
Mar. 19, 1927	383	14	Aug. 20, 1927	14	4
Mar. 26, 1927	568	22	Aug. 27, 1927	8	3
Apr. 2, 1927	649	48	Sept. 3, 1927	27	0
Apr. 9, 1927	386	40	Sept. 10, 1927	17	0
Apr. 16, 1927	175	38	Sept. 17, 1927	13	2
Apr. 23, 1927	125	43	Sept. 24, 1927	6	3
Apr. 30, 1927	105	23	Oct. 1, 1927	18	1
May 7, 1927	106	19	Oct. 8, 1927	14	1
May 14, 1927	367	16	Oct. 15, 1927	5	1
May 21, 1927	770	26	Oct. 22, 1927	3	1
May 28, 1927	353	38	Oct. 29, 1927	9	1
June 4, 1927	239	37	Nov. 5, 1927	1	1

CUBA

Communicable diseases—Habana—October, 1927.—During the month of October, 1927, communicable diseases were reported in Habana, Cuba, as follows:

Disease	New cases	Deaths	Remaining under treatment Oct. 31, 1927	Disease	New cases	Deaths	Remaining under treatment Oct. 31, 1927
Diphtheria	4		1	Measles	12	1	19
Leprosy	2		18	Typhoid fever [1]	31	5	57
Malaria [1]	62	1	49				

[1] Many of these cases from the interior.

EGYPT

Communicable diseases—Two weeks ended September 16, 1927.—During the two weeks ended September 16, 1927, communicable diseases were reported in Egypt as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Influenza	335		Typhoid fever	128	
Smallpox	4		Typhus fever	3	1

IRAQ

Cholera statistics—October 2–8, 1927—Summary.—Cholera cases and deaths have been reported in seven cities of Iraq for the week ended October 8, 1927, and from the beginning of the outbreak in July, 1927, to October 8, as follows:

City	Week ended Oct. 8, 1927		Total to Oct. 8, 1927	
	Cases	Deaths	Cases	Deaths
Amarah	10	3	131	103
Basra	1	1	416	337
Diwaniyah	44	26	53	30
Hillah	1		7	5
Kerbala	11	7	31	18
Kut	1		8	6
Muntafiq	5	3	185	118
Total	73	40	831	617

IRISH FREE STATE (IRELAND)

Typhus fever—Donegal County—October 16–22, 1927.—During the week ended October 22, 1927, four cases of typhus fever were reported in the urban district of Letterkenny, Donegal County, Irish Free State.

LIBERIA

Yellow fever—Monrovia—September 4–10, 1927.—During the week ended September 10, 1927, a case of yellow fever was reported at Monrovia, Liberia.

MADAGASCAR

Plague—August 1–15, 1927.—During the two-week period ended August 15, 1927, 42 cases of plague with 40 deaths were reported in the Island of Madagascar. The greatest number of cases occurred in the Province of Ambositra, viz, 22, with 22 deaths; type, pneumonic. The distribution of occurrence according to type was as follows: Bubonic cases, 13; pneumonic, 23; septicemic, 6.

MEXICO

Hemorrhagic malaria—State of Tabasco—October 22, 1927.—Information received under date of October 22, 1927, shows the occurrence of cases of hemorrhagic malaria in the State of Tabasco, Mexico, following a severe flood in that region. It was stated that a sanitary and medical brigade had been organized for the relief of the situation.

SENEGAL

Plague—Yellow fever—October 3–16, 1927.—During the two weeks ended October 16, 1927, plague and yellow fever were reported as follows:

Plague.—Cases, 129; deaths, 40. The occurrence was distributed according to locality as follows: Baol region—Cases, 56; deaths, 14. Cayor region—Cases, 65; deaths, 26. Louga district—Cases, 8.

Yellow fever.—Cases, 24; deaths, 18; of which 5 cases with 4 deaths occurred in interior localities. Urban occurrence was: Dakar—Cases, 12; deaths, 7. Rufisque—One fatal case (maritime towns). Thies (a railroad town situated a short distance from the coast)—Cases, 6; deaths, 6, one of these fatal cases being in an European.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended November 18, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	Sept. 30-Oct. 1	10		
Canton	Sept. 18-Oct. 1	8	8	
India				Sept. 4-17, 1927: Cases, 15,021; deaths, 7,800.
Madras	Oct. 2-8	9	3	
Rangoon	Sept. 25-Oct. 1	3	3	
India, French Settlements in	July 17-Aug. 27	82	59	
Indo-China (French)	Aug. 11-Sept. 20	1,924		
Annam	do	1,573		
Cambodia	do	73		
Cochin-China	do	87		
Laos	do	86		
Tonkin	do	105		
Iraq				Oct. 2-8, 1927: Cases, 73; deaths, 40. July 24-Oct. 8, 1927: Cases, 831; deaths, 617.
City—				
Amarah	Oct. 2-8	10	3	July 24-Oct. 8, 1927. Cases, 131; deaths, 103.
Basra	do	1	1	July 24-Oct. 8, 1927: Cases, 416, deaths, 337.
Diwaniyah	do	44	26	July 24-Oct. 8, 1927: Cases, 53; deaths, 30.
Hillah	do	1		July 24-Oct. 8, 1927. Cases, 7, deaths, 5.
Kerbala	do	11	7	July 24-Oct. 8, 1927. Cases, 31; deaths, 18.
Kut	do	1		July 24-Oct. 8, 1927: Cases, 8; deaths, 6.
Muntafiq	do	5	3	July 24-Oct. 8, 1927: Cases, 185; deaths, 118.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Azores:				
St. Michael's	Sept. 4-Oct. 1	3	1	
India				Sept. 4-10, 1927. Cases, 1,087; deaths, 569.
Bombay	Sept. 18-24	2	1	
Madras Presidency	Sept. 11-17	87	43	
Rangoon	Sept. 25-Oct. 1	3	3	
Java:				
Batavia	Sept. 18-24	21	21	Province.
East Java and Madura—				
Surabaya	Sept. 4-10	4	4	Received out of date. Aug. 7-13, 1927: Cases, 6; deaths, 5.
Madagascar				Aug. 1-15, 1927: Cases, 42; deaths, 40.
Province—				
Ambositra	Aug. 1-15	1	1	Bubonic.
Antsirabe	do	22	22	Pneumonic.
Itasy	do	3	1	Bubonic.
Moramanga	do	3	3	Septicemic.
Tananarive—				
Town	do	4	4	Bubonic, 2; septicemic, 2.
Other localities	do	9	9	Bubonic, 7; pneumonic, 1; septicemic, 1.
Senegal	Oct. 3-16			Cases, 129; deaths, 40.
Baol	do	56	14	
Cayor	do	65	26	
Louga	do	8		
Syria:				
Beirut	Sept. 1-10	1		

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Aug. 1-Sept. 20	731		
Brazil:				
Porto-Allegre	Sept. 1-30	3		
Canada:				
Alberta—				
Edmonton	Oct. 23-29	1		
Ontario—				
Ottawa	do	47		
Toronto	do	2		
Quebec—				
Rivière du Loup	Oct. 30-Nov. 5	3		

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended November 18, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
China:				
Canton	Sept. 18-24	1	1	
Manchuria—				
Mukden	Sept. 25-Oct. 1	1		
Pensihu	do	1		
Chosen	July 1-31	19	6	
France	Aug. 1-31	6		
Gold Coast	July 1-31	1		
Great Britain:				
England and Wales	Oct. 16-22			Cases, 200.
Bristol	Oct. 16-22	6		
Leeds	do	6		
Sheffield	Oct. 10-22	4		
India				Sept. 4-10, 1927: Cases, 1,109; deaths, 266.
Bombay	Sept. 18-24	1		
Madras	Oct. 2-8	1		
Rangoon	Sept. 25-Oct. 1	2	1	
India, French Settlements in	July 17-Aug. 27	57	44	
Indo-China	Aug. 11-Sept. 20	14		
Italy:				
Rome	July 11-17	1		Including the entire Romna consular district.
Java:				
East Java and Madura—				
Surabaya	Aug. 7-13	3	1	
Mexico				June 1-30, 1927: Deaths, 64.
Morocco				Aug. 1-31, 1927: Cases, 76.
Nigeria				July 1-31, 1927. Cases, 492; deaths, 83.
Siam				Apr. 1-Sept. 24, 1927: Cases, 250; deaths, 67.
Syria:				
Damascus	Sept. 21-30	4		
Venezuela:				
Maracaibo	Sept. 27-Oct. 3		1	

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Bulgaria	July 11-Aug. 10	19	1	
Sofia	Oct. 15-21	2		
Chosen	July 1-31	72	8	
Egypt	Sept. 3-16	3	1	
Irish Free State (Ireland):				
Donegal County—				
Letterkenny	Oct. 16-22	4		Urban district.
Lithuania	Aug. 1-31	18	8	
Mexico	June 1-30		26	
Mexico City	Sept. 25-Oct. 22	20		Including municipalities in Federal district.
Morocco	Aug. 21-Sept. 20	29		
Poland	Sept. 18-24	6		
Rumania	July 24-Aug. 27	44	5	

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Liberia:				
Monrovia	Sept. 4-10	1		
Senegal				Oct. 3-16, 1927: Cases, 24; deaths, 18.
Interior—				
Kebemer district	Oct. 9-16	1	1	
Kelle district	do	2	1	
Khombole district	Oct. 3-9	2	2	Including Gueoul; in Europeans.
Urban—				
Dakar	Oct. 3-16	12	7	
Rufisque	Oct. 9-16	1	1	
Thies	Oct. 3-16	6	6	One in European.
On vessel:				
S. S. Desirade	Sept. 16	1	1	At Leixoes, Portugal, in passenger embarked at Dakar, Senegal.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 11, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-Sept. 24	103	11	
Canton	May 1-Sept. 17	81	46	
Foochow	July 24-Sept. 10			Present.
Hong Kong	July 17-Sept. 3	3	3	
Kulangsu	June 21	1		
Shanghai	June 19-25	2		
Do	July 31-Oct. 1		114	In international settlement and French concess on.
Swatow	May 15-Sept. 10	138	13	
Tientsin	Aug. 27-Sept. 17	9		
India	Apr. 17-Sept 3			Cases, 159,454; deaths, 87,607.
Bombay	May 8-Sept. 17	127	57	
Calcutta	May 8-Sept. 24	727	426	
Karachi	May 29-June 4	1	1	
Madras	June 19-Oct. 1	823	437	
Rangoon	May 8-Sept. 24	20	16	
India, French Settlements in	Mar. 30-July 16	171	109	
Indo-China (French)	Apr. 1-Aug. 10			Cases, 13,640.
Annam	do	2,936		
Cambodia	do	335		
Cochin-China	do	1,519		
Saigon	June 4-Sept. 2	11	4	
Laos	July 11-Aug. 10	137		
Tonkin	Apr. 1-Aug 10	9,713		
Iraq:				
Baghdad	July 24-30	29	18	
Basra	July 17-Sept 17	383	288	
Japan:				
Yokohama	July 31-Aug. 6	1	1	
Persia:				
Abadan	July 24-Aug. 13	215	183	
Ahwaz	July 31-Aug 13	20	13	
Minab	Aug. 7-13		23	
Mohammerah	July 17-Aug 27	194	155	
Nasseri	July 19-31		10	
Philippine Islands:				
Manila	July 17-Aug. 27	2		
Bulacan Province	June 7-July 8	3	2	
Leyte Province—				
Barugo	June 29	1	1	
Carigara	June 23	1	1	Final diagnosis not received.
Palo	May 18	1		
Siam	May 1-Sept. 17			Cases, 356, deaths, 209.
Bangkok	do	48	15	
On vessel:				
S. S. Adrastus	Reported Aug 6	1	1	At Yokohama, Japan.
S. S. Montreal Maru	Sept. 20			At Muke, Japan.
S. S. Tabaristan	Oct. 6	1		Case in coolie removed at Basra.
S. S. Morea	Sept. 2			At Hong Kong; cholera-infected.
S. S. War Mehtar (oil tanker).	Aug. 4	1	1	At Saffagha, Egypt.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	Aug. 21-31	1		
Oran	Aug. 21-Sept. 10	5	4	
Argentina	Jan. 1-Aug. 2			Cases, 80; deaths, 44.
Buenos Aires	Apr. 10-May 7	4	3	
Cordoba	Jan. 11-Aug. 6	52	29	
Corrientes	June 1	1	1	
Entre Rios	Mar. 29-Aug. 13	8	1	
Sante Fe	Apr. 28-May 16	4	3	
Territory—				
Chaco—				
Barranqueras	May 29	2	2	
Formosa	June 25	3	2	
Pampa	July 27-Aug. 2	4		
Rio Negro	Aug. 6	1		
City—				
Merou	Reported July 14			Present.
Rosario	May 7	1	1	
Santa Fe	May 16	4	2	

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 11, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Azores:				
St. Michaels Island	May 15-Aug. 27	6		
Rebeira Grande	June 12-18	1		
Brazil:				
Sao Paulo	June 3-9	1	1	
British East Africa:				
Kenya	Apr. 24-July 31	73	14	
Mombasa	July 24-30	1	1	
Nairobi	May 22-28	6		
Tanganyika	Mar. 29-May 28		37	
Do	July 24-Aug. 28		40	
Uganda	Jan. 1-Feb. 28	138	121	
Do	Mar. 27-June 18	469	300	
Canary Islands:				
Laguna district—				
Tejina	June 17	1		
Las Palmas	Oct. 8-11	8		
Ceylon:				
Colombo	May 1-Sept. 24	21	14	Plague rats, 4.
China:				
Amoy	July 3-23			Present in surrounding country.
Mongolia	Reported Oct. 11		200	Approximate.
Tientsin	Aug. 14-20	2		
Tungliao	Reported Oct. 15			Outbreak.
Ecuador:				
Guayaquil	June 1-Aug. 31	7		Rats taken, 72,410; found infected, 45.
Egypt:				
Alexandria	June 4-Sept. 2	4		
Beni-Souef	June 4-July 13	5	2	
Biba	June 4-10	1		At Nama.
Dakhalia	June 24-July 9	6	1	
Minia	Aug. 8-9	4		
Port Said	June 24-July 21	4	1	
Suez	Sept. 4	1		
Tanta district	June 4-10	1		
Greece	May 1-June 30	4	3	
Athens	June 1-Aug. 29	3		Including Piraeus.
Mytilene	Aug. 9-Sept. 26	6		
Patras	May 30-Oct. 1	9	2	
Hawaii Territory:				
Hamakua	July 15-Aug. 30			2 plague rodents.
Honokaa	May 17-23	2	2	
Kukuihaele	Aug. 12-17	1	1	Do.
Paauilo	July 26-Aug. 1		4	
India	Apr. 17-Sept. 3			Cases, 23,708; deaths, 9,276.
Bombay	May 8-Sept. 17	100	85	
Calcutta	Aug. 21-Sept. 3	18	10	
Madras	May 1-Sept. 10	1,237	568	
Rangoon	May 8-Sept. 17	70	64	
Indo-China (French)	Apr. 1-Aug. 10	50		
Saigon	Sept. 2-16	2		
Kwang-Chow-Wan	May 21-July 31	73		
Iraq:				
Baghdad	Apr. 8-May 28	12	1	
Java:				
Batavia	May 1-Sept. 17	292	273	Province.
East Java and Madura	May 22-July 16	28	27	
Pasoeroean Residency	May 9			Outbreak reported at Nagdiwano.
Surabaya	Apr. 17-Sept. 3	75	74	
Madagascar				Mar. 16-Apr. 30, 1927: Cases, 256; deaths, 135.
Province—				
Ambositra	Mar. 16-July 31	99	92	
Antsirabe	Mar. 16-May 15	8	8	
Miarinarivo (Itasy)	Mar. 16-July 31	69	63	
Moramanga	May 16-July 31	28	27	
Tananarive	Mar. 16-July 31	233	204	
Tananarive Town	Mar. 16-June 30	22	20	
Mauritius:				
Port Louis	May 1-June 30	1	1	
Nigeria	Mar. 1-May 31	228	117	
Peru	Apr.-May 31			Cases 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	Apr. 1-July 31	13	8	
Lima City	Apr. 1-30	5	1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 11, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Senegal	May 23-Sept. 25			Cases, 1,030; deaths, 606.
Baol	June 2-Oct. 2	179	95	
Cayor Frontier	July 4-Oct. 2	917	530	
Dakar	June 20-Oct 2	147	94	
Facel	July 6	17	8	
Guindel	June 20-26	11	2	
Louga district	Sept. 18-25	5	4	
M'Bour	July 6-10	28	23	
Medina	June 13-19	2	2	
Pout	July 4-10	1		
Rufisque	May 23-Sept. 25	223	167	
Thies district	do	34	15	
Tivaouane	June 2-July 17	50	32	
Siam	Apr. 1-June 25			Cases, 10; deaths, 7.
Bangkok	May 8-June 11	2	1	
Syria:				
Beirut	June 11-July 10	3		
Tunisia	Apr 21-July 10	144		
Tunis	July 25-Aug. 1	1		
Turkey:				
Constantinople	May 13-19	1		
Do	Sept. 18-24	1		
Union of South Africa:				
Cape Province—				
Maraisburg district	May 1-14	2	2	Native.
Orange Free State—				
Edenburg district	July 17-26	3	3	Natives; on farm.
Rouxville district	July 24-Aug 6	2	2	
On vessel:				
S. S. Avoroff	June 24-30	1		Greek warship at port of Athens.
S. S. Capafric	Aug. 23	3	1	At Duala, French Cameroons, from Nigeria.
S. S. Elcano	Aug. 19	1		At Piræus, Greece.
S. S. Madonna	Aug. 24	1		At Dakar, Senegal, from ports south
S. S. Ransholm	Aug 5	3		At Gefle, Sweden, from Rufisque, Senegal.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-July 31			Cases, 862.
Algiers	May 11-June 30	8		
Oran	May 21-Oct. 10	69		
Angola	June 1-July 31	45		
Arabia				
Aden	July 17-Aug. 1	2	1	
Brazil:				
Bahia	Aug. 7-13	1		
Porto Alegre	July 1-Aug 31	8		
Rio de Janeiro	May 22-Sept. 17	23	19	
British East Africa:				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 29-June 18		22	
Do	Aug 7-28		21	
Zanzibar	Apr. 1-Aug. 31	121	41	
British South Africa				
Northern Rhodesia	Apr. 30-Sept. 9	179	8	
Canada	June 5-Oct 22			Cases, 698.
Alberta	June 12-Oct. 22			Cases, 233.
Calgary	June 12-Aug. 27	9		
British Columbia—				
Vancouver	May 23-Sept. 4	4		
Manitoba	June 5-Oct. 22			Cases, 45.
Winnipeg	June 12-Oct 22	23		
Nova Scotia	Sept. 11-Oct. 15	2		
Halifax	Oct 8-15	1		
Ontario	June 5-Oct. 22			Cases, 311.
Ottawa	June 12-Oct. 22	205		
Sarnia	Aug. 7-13	1		
Toronto	June 19-Oct. 22	21		
Windsor	Oct. 2-15	9		
Quebec	June 19-Oct. 22	23		
Saskatchewan	June 12-Oct. 22			Cases, 151.
Moose Jaw	Aug. 14-Oct. 22	24		
Regina	July 17-Oct. 8	15		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 11, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Ceylon	May 1-7			Cases, 3; deaths, 1.
Colombo	July 31-Aug. 6	1	1	
China:				
Amoy	May 8-28	1		
Do	July 3-16			Present in surrounding country.
Antung	July 4-31	3		
Chefoo	May 8-14			Present.
Foochow	May 8-Sept. 10			Do.
Hong Kong	May 8-Sept. 17	22	21	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-July 30	8		
Dairen	May 2-July 3	10	5	
Fushun	May 15-Sept. 17	11		
Harbin	June 13-July 10	4		
Kaiyuan	July 3-9	2		
Mukden	May 22-July 30	6		
Pensihu	July 3-9	1		
Ssupingkai	May 8-July 9	3		
Tientsin	May 8-Sept. 10	18	4	
Chosen	Feb. 1-June 30			Cases, 507; deaths, 205.
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr. 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr. 1-30	1		
Curacao	May 29-June 4	1		Alastrim
Ecuador:				
Guayaquil	June 1-Aug. 31	4		
Egypt	May 7-July 29			Cases, 21; deaths, 3.
Alexandria	May 21-June 17	4	1	
Cairo	Jan. 22-Apr. 15	14	3	
France	Apr. 1-July 31			Cases, 201.
Lille	July 24-30	1		
Paris	May 21-July 31	14	2	
Gold Coast	Mar. 1-June 30	11	7	
Great Britain:				
England and Wales	May 22-Oct. 15			Cases, 3,610.
Birmingham	Aug. 14-Sept. 30	2		
Bradford	May 29-June 11	2		
Cardiff	June 19-July 2	1		
Leeds	July 17-Oct. 8	17		
Liverpool	July 17-30	1		
London	May 15-June 18	2		
Manchester	Oct. 2-15	3		
Newcastle-upon-Tyne	June 12-Oct. 15	11		
Sheffield	June 12-Oct. 8	29		
Stoke-on-Trent	Aug. 21-27	1		
Scotland—				
Dundee	May 29-Sept. 3	6		
Greece	June 1-30	14		
Saloniki	July 12-Aug. 15		2	
Guatemala:				
Guatemala City	June 1-30		9	
Guinea (French)	June 4-10	9		
India	Apr. 17-Sept. 3			Cases, 76,054; deaths, 20,070.
Bombay	May 28-Sept. 17	243	158	
Calcutta	May 8-Sept. 24	412	315	
Karachi	May 15-Aug. 6	10	5	
Madras	May 22-Oct. 1	34	8	
Rangoon	May 8-Sept. 24	192	157	
India, French Settlements in	Mar. 20-June 18	174	111	
Indo-China (French)	Mar. 21-Aug. 10			Cases, 318.
Saigon	May 14-Sept. 9	4	1	
Iraq:				
Baghdad	Apr. 10-Oct. 1	8	4	
Basra	Apr. 10-Sept. 17	9	8	
Italy	Apr. 10-May 21	13		
Rome	June 13-July 10	2		
Jamaica	May 29-Sept. 24	37		Reported as alastrim.
Japan	Apr. 3-May 7			Cases, 19.
Nagasaki City	June 20-Aug. 14	26	7	
Taiwan Island	May 21-31	1		
Java:				
Batavia	May 22-Aug. 20	7		
East Java and Madura	Apr. 24-Sept. 3	20		
Latvia	Apr. 1-30	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 11, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Mexico	Mar. 1-May 31			Deaths, 557.
Acapulco	Aug. 28-Sept. 17	2	2	
Durango	June 1-30		1	
Monterey	July 1-31	6	4	
San Luis Potosi	May 29-Aug. 13		11	
Tampico	June 1-July 31	1	2	
Torreon	Aug. 7-Oct. 1		2	
Morocco	Apr. 1-July 31	207		
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in 2 localities.
Pasir Residency	Apr. 30-May 6			Epidemic outbreak.
Samarinda Residency	May 21-27			Do.
Nigeria	Mar. 1-June 30	2,352	570	
Paraguay:				
Asuncion	July 10-23		2	
Persia.				
Teheran	Feb 21-July 23		16	
Poland	Apr. 10-Aug. 6	20	2	
Portugal.				
Lisbon	May 29-Oct. 8	26	1	
Oporto	Sept. 3-9	1		
Senegal				
Medina	July 4-10	7		
Siam	Apr. 1-Sept 3			Cases, 246; deaths, 66.
Bangkok	May 1-Sept. 10	16	8	
Spain:				
Madrid	Aug. 1-31		1	
Valencia	May 29-June 4	3		
Do	Sept. 25-Oct. 1	1		
Straits Settlements	June 12-18			Cases, 3.
Singapore	Apr. 1-June 18	7	2	
Sumatra:				
Medan	June 5-Aug. 20	3		
Switzerland:				
Berne	June 26-July 2	1		
Syria.				
Damascus	Aug. 11-Sept. 20	4		
Tunisia	Apr. 1-June 10			Cases, 10.
Tunis	June 1-10	1		
Union of South Africa:				
Cape Province	July 7-Aug. 20			Outbreaks.
Elliott district	May 11-June 10			Do.
Idutywa district	July 3-9			Do.
Kalanga district	May 11-June 10			Do.
Mount Ayliffe district	July 31-Aug. 6			Do.
Orange Free State	Aug. 7-13			Do.
Transvaal—				
Barberton district	May 1-7			Do.
Venezuela:				
Maracaibo	July 12-Sept. 12		3	

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-July 20			Cases, 899; deaths, 39.
Algiers	May 11-Oct. 10	33		
Oran	May 21-Aug. 31	34		
Argentina:				
Rosario	Aug. 1-31		1	
Bulgaria	Mar. 1-July 10			Cases, 226; deaths, 20.
Sofia	June 4-Oct. 14	17		
Chile:				
Antofagasta	Apr. 16-May 31	1		
Do	Sept 25-Oct. 1		1	
Concepcion	May 29-June 4		1	
La Calera	Apr. 16-May 31	1		
Ligua	Mar. 16-31	2		
Puerto Montt	Apr. 16-May 31	1		
Santiago	do	5	1	
Talcahuano	July 10-16		1	
Valparaiso	Apr. 16-Sept. 3	5	3	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 11, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
China:				
Manchuria—				
Harbin	July 25–Aug. 21	5		
Mukden	May 29–June 4	1		
Tientsin	July 10–16	1		
Chosen	Feb. 1–June 30			Cases, 721; deaths, 60.
Chemulpo	May 1–Aug. 31	3		
Gensan	do	4		
Seoul	Apr. 1–Aug. 31	35	3	
Czechoslovakia	do			Cases, 55.
Eypt	May 28–Sept. 2			Cases, 127, deaths, 19.
Alexandria	May 21–Aug. 5	13	5	
Cairo	Jan. 15–July 1	43	16	
Port Said	Sept. 24–30	1		
Estonia	Apr 1–June 30			Cases, 5.
Greece	June 1–30	2		
Athens	June 1–July 31		9	
Guatemala:				
Guatemala	Aug 25–31		1	
Iraq:				
Baghdad	Apr 24–30	1		
Irish Free State:				
Cork County	July 3–9	1		In urban district.
Latvia	Apr 1–July 31	32		
Lithuania	Feb. 1–July 31	347	42	
Mexico	Feb 2–May 31			Deaths, 140.
Mexico City	May 29–Sept 24	59		Including municipalities in Federal district.
San Luis Potosi	July 31–Aug. 6		1	
Morocco	Apr. 1–Aug. 20	952		
Palestine	May 24–Sept 26			Cases, 29
Haifa	May 24–Aug. 29	8		
Jaffa	Aug 2–Oct. 3	3		
Jerusalem	June 28–Aug 15	3		
Mahnaim	May 17–23	1		In Safad district.
Nazareth	July 19–25	1		
Safad	May 17–Aug 8	10		
Peru:				
Arequipa	Apr 1–30		1	
Do	Aug. 1–31		2	
Poland	Apr 10–Sept 17	1,117	102	
Portugal:				
Lisbon	May 29–June 4	1		
Oporto	Aug 20–27	1		
Rumania	Apr. 3–July 23	956	64	
Spain:				
Seville	Aug 19–25		2	
Syria:				
Aleppo	Sept 11–17	2		
Tunisia	Apr. 22–July 20			Cases, 158.
Tunis	July 5–Aug. 21	2		
Turkey:				
Constantinople	May 13–19		2	
Union of South Africa	Apr 1–30			Cases, 55; deaths, 8, native. In Europeans, cases, 2.
Cape Province	Apr. 1–Aug 27	42	5	
Albany district	June 5–11			Outbreaks.
East London	May 22–28	1		Do.
Glen Gray district	May 1–7			Do.
Kentani district	June 26–July 2			Do.
Port Elizabeth	Aug. 7–13	1		
Qumbu district	May 1–7			Do.
Umzimkulu district	June 26–July 2			Do.
Natal	Apr. 1–Aug 6	7	3	
Impendhle district	June 5–11			Do.
Orange Free State	Apr 1–July 23	5		
Transvaal	Apr 1–30	1		
Johannesburg	July 3–Aug. 20	19	5	
Yugoslavia	May 1–Aug. 31			Cases, 24; deaths, 5.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 11, 1927—Continued

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Ashanti:				
Obuasi	Aug. 6	1	1	
Dahomey (West Africa):				
Porto Novo	July 1	1	1	In Syrian woman.
Gold Coast	Apr. 1-June 30	60	22	
Do	Aug 4	2		
Ivory Coast	July 29	1	1	
Liberia.				
Monrovia	May 29-July 8	4	5	
Senegal:				
Dakar	July 9	1		
Do	Aug. 8		2	
Do	Sept. 17			Present.
Geoul	Sept. 26-Oct. 2	1	1	
Island of Goree	Aug 22-Sept. 4	2	2	
Khombole	Aug. 1-Oct 2	4	1	
Louga	Sept. 26-Oct. 2	1	1	
M'Bour	May 27-June 19	5	5	
Ouakam	June 2-Aug. 14	4	2	
Pout	Sept. 19-25	1	1	
St. Louis	Aug. 1-Oct. 2	3	3	
Thies	July 10	1	1	In European.
Do	Sept. 12-Oct. 2	4	4	
Tiaroye	Aug. 22-Sept. 4	1	1	
Tivaouane	May 27-Sept. 11	6	5	
Togoland:				
Meiatza	Aug. 15-21	1	1	

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TREASURY DEPARTMENT

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SPECIAL ARTICLES

Prevalence of Poliomyelitis in the United States
The University in Relation to the Public Health
Five-Year Infant Mortality Survey in Buffalo, N. Y.
Reports of the Health Section, League of Nations

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UNITED STATES PUBLIC HEALTH SERVICE

HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

Asst. Surg. Gen. R. C. WILLIAMS, *Chief of Division*

The PUBLIC HEALTH REPORTS are issued weekly by the United States Public Health Service through its Division of Sanitary Reports and Statistics, pursuant to acts of Congress approved February 15, 1893, and August 14, 1912.

They contain: (1) Current information of the prevalence and geographic distribution of preventable diseases in the United States in so far as data are obtainable, and of cholera, plague, smallpox, typhus fever, yellow fever, and other communicable diseases throughout the world. (2) Articles relating to the cause, prevention, or control of disease. (3) Other pertinent information regarding sanitation and the conservation of the public health.

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CONTENTS

PUBLIC HEALTH REPORTS

VOL. 42 NOVEMBER 25, 1927 NO. 47

PREVALENCE OF POLIOMYELITIS IN THE UNITED STATES

Reports from 43 States for the week ended November 12, 1927, showed a decrease of nearly 12 per cent in the number of cases of poliomyelitis as compared with the reports for the preceding week.

These 43 States reported 317 cases of poliomyelitis for the week ended November 12, 1927, 400 cases for the week ended November 5, and 453 cases for the week ended October 29, 1927.

Comparing the reports for the week ended November 5, 1927, with those for the week ended November 12, Ohio reported a decrease from 54 cases to 26, Massachusetts figures dropped from 56 to 38, and the number of cases in California decreased from 35 for the earlier week to 23 for the later. Pennsylvania, Illinois, Iowa, Idaho, and Oregon showed slight increases, but in all of these States except Idaho the prevalence of poliomyelitis is less than it was a few weeks ago.

Reports for the three years, 1925 to 1927, inclusive, are available from 39 States. They reported 267 cases of poliomyelitis for the week ended November 12, 1927, 52 cases for the corresponding week of 1926, and 72 cases for the week in 1925.

Reports by States for four weeks ended November 12, 1927, are given in the table on page 2909, and reports for the week ended November 19, 1927, will be found on page 2919.

THE UNIVERSITY IN RELATION TO THE PUBLIC HEALTH[1]

By J. W. KERR, Assistant Surgeon General, *United States Public Health Service*

The establishment of higher institutions of learning has been the landmark of civilization in all countries. Our country is no exception. The extent of the maintenance of these institutions has been the measure of progress attained. The material prosperity of our people, which is the marvel of the period, is largely due to the application of scientific knowledge in the development of our natural resources, but among other factors the conservation of health has played an important part.

Within the past quarter of a century the death rate from typhoid fever has been reduced from 35.9 to 6.7 per hundred thousand popu-

[1] Presented before The Association of Governing Boards of State Universities and Allied Institutions, Madison, Wis., November, 1926.

lation. The tuberculosis death rate has been reduced from 201.9 per hundred thousand to 90.6. The morbidity from many other diseases has been greatly reduced, and some diseases have been eliminated. From 1897 to 1920, an average of 11 years has been added to the expectancy of life in the United States, and since 1921 certain industrial firms have been able to reduce by about 25 per cent per person the time lost from work on account of sickness and accidents. These figures represent an incalculable saving in dollars and cents as well as reduction of human misery. They also explain in some measure why the luxuries of the past have become the necessities of the present.

These results have been accomplished by scientific research and the application of the information thus obtained by governmental and private agencies. Hitherto these agencies have worked more or less independently of one another. Moreover, their work has been directed largely to the solution of problems that immediately presented themselves, such as the determination of the causes and methods of transmission and control of the communicable diseases.

But the problems that now offer themselves are becoming increasingly complex, and the need for their solution has been emphasized by the relatively low physical and mental standards demonstrated by medical examinations of the troops included in the drafts for the World War. It is evident, therefore, that more highly organized procedures must be adopted in future for the promotion of health.

On being selected by the Surgeon General to confer with you regarding the relation of the university to the public health, it was realized that the subject would have to be presented on my part from the standpoint of an official who has devoted many years to Federal health activities, but has had little experience in university life aside from his student days. Because of the experience had in Federal health work, however, the conviction has been reached that the university has a very vital relation to future plans for public health advancement, and this conviction has been deepened by the study of health activities as conducted by State and local governments. In general, this relationship may be outlined as follows:

1. Conservation of the health of students.
2. Education regarding individual and community health.
3. The training of health workers.
4. The promotion of coordinated research.

CONSERVATION OF THE HEALTH OF STUDENTS

With the recognition of the necessity not only of preventing communicable diseases among students, but of promoting their general health and fitting them to their tasks, "student health services" have been organized in many universities and colleges. The development of this work has been coincident with allied activities

among other groups of the population, especially industrial workers. They are but a part of the great forward movement that has been in progress in recent years. The activities of these organizations need not here be described. They should include supervision of personal hygiene, sanitation of environment, and selective education in respect to health, especially as relates to individual and community responsibility. By reason of the clientele affected, the success of these activities will depend largely on the personality of the director in charge and his ability to promote coordination, not only of the departments of the university, but of the health authorities within whose jurisdiction his institution is located.

Physical examinations for the detection and correction of physical defects and the sanitation of environment form essential parts of the work. Here accepted principles of health administration may be practiced. But the maintenance of proper advisory relations with students in health matters is of supreme importance. The beginning of university life is an abrupt transition in the life of every student. He must necessarily undergo a process of orientation, and while doing so he should have the advantage of sound advice.

With proper instruction and close personal association, much may be done to interest the students in individual and community health, and some students may be properly influenced to adopt health work as a career. I think it must be the experience of practically every university student that the admiration for and association with some particular teacher have influenced his entire life. In the professional schools, students develop new ideals and sometimes decide upon their particular specialties in consequence of such influence.

Too often, however, professional students, particularly students of medicine, are discouraged by their advisers from adopting public health as a vocation. It may be frankly conceded that the financial rewards are not comparable to those of the medical specialties, but from the standpoint of service, public health stands high in the list. In my own case, for example, I believe my professors thought that I was throwing away my opportunities by entering the public-health field; but, in experience and satisfaction, my work has been amply rewarded. However, the bearing of political and social conditions on health work as a career 30 years ago was far more adverse than to-day. In the future these conditions may be expected further to improve.

EDUCATION REGARDING INDIVIDUAL AND COMMUNITY HEALTH

In the past the interest in health work has been advanced largely by propaganda. It was most successful among the masses. That method is being rapidly displaced by systematic instruction of persons of school age and governmental administration on behalf of citizens generally.

Instruction regarding individual and community health should be begun in the primary grades and continued throughout the student's school life. Students will thus enter universities with a broader conception of the principles of public health. Suitable textbooks at every stage of the child's school career and suitably qualified teachers are essential to proper health instruction. The importance of proper normal-school training can not be overemphasized.

The present need is the instruction of men and women as to the value of efficient public-health administration in order that it may receive not only adequate financial support, but moral support and recruits to carry it on. Without turning the university into a center for the dissemination of ill-advised uplift schemes, its clientele may be instructed as never before regarding the value of scientific knowledge and its practical application for the protection of health and the promotion of human efficiency. I know of no field in which greater progress has been made during the past 25 years; yet its surface has hardly been touched.

Progress in the future will depend on advancement in science, and that nation will be most benefited whose citizens foster systematic research. This is the particular field of the Federal Government as relates to health. It is also the province of the university as an educational agency to disseminate education regarding the importance of public-health research and to train practical sanitarians and scientific workers to engage in it.

THE TRAINING OF HEALTH WORKERS

The value of health work has not been sufficiently appreciated by the general public to encourage young men and women in sufficient numbers to select this field as a career.

That there is considerable interest in the subject is evidenced, however, by the progress recently made. One of the most significant events of recent years was the conference on "the future of public health in the United States and the education of sanitarians," convened by the Surgeon General of the Public Health Service on March 14, 1922. Representatives of institutions of learning from 18 States attended the conference and devoted several days to earnest consideration of the subject. I know of no convention held in Washington made up of scientists and publicists of greater eminence.

On account of the increasing demand, not only for health officers, but scientific workers, sanitarians in industry, etc., various methods have been considered and some of them have been adopted, viz, short courses of instruction for those who have already engaged in the work, but without having all the required qualifications; systematic courses leading to degrees or certificates of proficiency; and highly specialized training in preparation for research.

Following the conference mentioned, public health institutes were organized in several universities here and there to give short courses in health work. The purpose was to provide practical instruction for the large group who have already entered the public health field without all the required qualifications, some of them devoting only a part of their time to these duties.

While the needs for these special institutes will continue only so long as the supply of systematically trained professional workers is inadequate, State universities, in cooperation with State and local health departments, may well offer short summer courses of instruction for the benefit of any who will take them. As an inducement, these courses have been given here and there in conjunction with other courses in which the student had as great or even greater interest. This applies particularly to practitioners of medicine.

In addition, systematic instruction may well be organized and supported, leading to degress or certificates of proficiency in the several specialites where adequate facilities are available. It would seem that the State university, in particular, should consider, in conjunction with State and local health authorities, the giving of well-rounded courses for the training of practical health administrators. It should be borne in mind, however, that information on many different subjects is the requisite of the properly trained health official. Not all universities may be in a position to furnish this instruction.

Indeed, it is doubtful whether universities with limited facilities or circumscribed fields should offer special instruction leading to the degree of doctor of public health. The fact should be frankly accepted that there should be specialization by universities in these matters. Whatever courses are offered, however, should provide the basic foundation to enable the student who desires to specialize to do so, and there should be available to him full advice as to the institution that will afford the larger facilities he requires. In other words, there is opportunity for universities to cooperate with each other and with health departments in health education. The relationship that has been maintained by the Western Reserve University with the local department of health is an excellent example. There would be great advantage in the development of some such plan whereby students during vacations might receive remunerative employment and at the same time acquire experience in public-health practice. This plan has long been followed in the training of physicians. It would seem to be worthy of serious trial in the case of public-health students.

While much of the work of the United States Public Health Service is highly specialized and seasonal, students have here and there been utilized, some of its ablest officers were formerly student helpers. By this means they were attracted to this field permanently.

It is the peculiar privilege of university authorities to discover and develop genius among students. The greatest single asset of any country is brains. Oftentimes they are developed in spite of almost insurmountable difficulties. Sometimes they are recognized, but through lack of incentive or opportunity, their potential value is lost to the country.

With the awakening of interest in public health and the acceptance of its economic value, large funds have been set aside by their donors for health betterment. I believe that if permanent funds comparable in size with some of the existing foundations were set aside in aid of students who give promise of unusual ability, no greater impetus could be given to the public health movement and to public health research. The selection of candidates might devolve on committees of university professors collaborating with the United States Public Health Service or some other central health agency which would aid the students in securing opportunities with special institutions of learning, scientific laboratories, and public health agencies, public and private.

I am aware that there are many ways by which students may receive aid and that there is danger of blighting ambition by aid unwisely rendered, but the aid here contemplated would be more far-reaching than that rendered for a brief undergraduate period. It might well cover the entire productive period of the research worker, depending on his ability and specialty. Why should there not be special research foundations for this purpose, not on behalf of institutions, but of individuals? In a speech on public health recently presented in the Senate, Senator Ransdell voiced this thought as follows:

> Some practical means should be devised whereby persons having potential qualifications may receive substantial aid in developing these qualifications unremittingly without thought of being hampered by personal financial considerations. It is possible that some such system might be developed through the coordinative efforts of faculties of universities. * * * Philanthropists may well be encouraged to establish endowments for the conduct of research and, above all, for the training and employment of scientists. They may be encouraged also to make donations for the use of the Federal Government in the promotion of scientific effort.

The money compensation in many institutions is so inadequate as to drive science teachers and research students into other fields. This unfortunate condition can only retard progress in pure science, notwithstanding the discovery of some new principle might revolutionize present-day conditions of life.

THE PROMOTION OF COORDINATED RESEARCH

In the past progress in science has depended on individual effort. A spirit of rivalry on the part of individuals and institutions has been one incentive. I believe there should be substituted for it the

spirit of cooperation. Herein the university has a great opportunity, as relates to health. This need is becoming more and more apparent.

During 12 years in the administration of research in the United States Public Health Service it was my experience that particular problems required the combined efforts of scientists having widely different qualifications and approaching from different angles. In our studies of pellagra, for instance, there were needed the earnest efforts of bacteriologists, pathologists, entomologists, epidemiologists, statisticians, chemists, physiologists, veterinarians, dermatologists, psychiatrists, and other specialized workers.

For the proper conduct of research, the fundamental sciences of physics, chemistry, and biology are as frequently to be looked to for recuits as the science of medicine. It has been necessary in governmental work, therefore, to requisition scientific aid from among the scientific departments of Government and private scientific institutions. This practice has grown by leaps and bounds in recent years. As an example may be mentioned the investigations of sanocrysin, a gold preparation in combination with serums advocated for the cure of tuberculosis. Before considering the granting of a license for its sale in interstate traffic, the Surgeon General requested the collaboration of the laboratories of the Bureau of Animal Industry, the Rockefeller Institute, and the Research Laboratory of the City of New York with the Hygienic Laboratory. Definite conclusions were speedily reached and license was not granted. This resulted in great economic saving to those afflicted with tuberculosis.

Another recent cooperative investigation conducted by the Public Health Service related to the problem of the influence on health of the manufacture, distribution, or use of tetraethyl lead gasoline. In this study, collaboration was had with Johns Hopkins, Harvard, Yale, and Vanderbilt Universities, the University of Chicago, the State Department of Health of Minnesota, and the municipal departments of health of Cincinnati and Dayton, Ohio. In consequence of this extensive collaboration, a pressing public health question was satisfactorily settled.

Through the Hygienic Laboratory and the National Tuberculosis Association, a highly important and extensive study of tuberculosis is now being conducted. Taking part in this program of research at the present time are the Hygienic Laboratory, the Bureau of Animal Industry, the National Research Council, 20 universities and special laboratories, and 2 manufacturing chemists. As stated by a colleague in charge of it, "The essence of the plan of this investigation is first to define carefully the various unsolved questions of a composite study of the whole disease; next to apportion each of these problems to the most expert student available and to make his task as easy as possible for him to pursue in his own laboratory; and

finally to arrange a conference of those students carrying on allied researches before a small group of competent judges who, by their criticisms and advice, will point out the next steps to be taken in the investigation."

Examples have been multiplied to indicate a field of cooperation of universities and other institutions interested in health with the Public Health Service. Many other instances of cooperation on the part of universities with the service in the past years might be mentioned. They have related to nutritional diseases, industrial hygiene, and other subjects. At present, the facilities of Johns Hopkins, Harvard, Yale, and Vanderbilt Universities are being utilized by officers in the prosecution of special studies. On the other hand, the facilities of the Hygienic Laboratory have been extended in the recent past to research workers from Leland Stanford and other universities of the United States and from the University of London.

In my opinion, cooperation of this character on the part of universities offers great opportunities for good. While the essential function of every university is the instruction of its students, research also has its place. Each university faculty will determine whether this function as conducted by it has any bearing on public health. If it has, the willingness should be shown to unite with other agencies to the extent of its abilities; and it should lend its support to the Public Health Service as the proper coordinating agency.

Other comprehensive investigations might then be planned by the scientific corps of the laboratory working in collaboration with scientists of States and municipalties and representatives of university faculties. This corps is composed of scientific workers in a number of specialties. It is the expectation that the number will be increased within reasonable limits.

With the organization contemplated and its coordination with universities and other appropriate scientific agencies, it should be practicable to advance public health research in the United States as never before.

These suggestions are based on (*a*) the great value that would accrue from systematic cooperation of official and nonofficial agencies; (*b*) the need of some responsible coordinating agency; (*c*) the economy to the Federal Government in having potentially available official and nonofficial agencies competent to engage in highly specialized research; (*d*) the acceptance of the fact that, while the fundamental function of the university is instruction in the sciences, it may be provided with special facilities with which to aid in studies of complex public-health problems; (*e*) the importance of defining the activities of official and nonofficial agencies in their respective fields consistent with economy and efficiency.

The availability of an endowment with which to establish permanent individual fellowships would enable the universities to train and advance scientific workers, and by this means also there would be provided for participating institutions, assistants highly specialized in the conduct of the work.

This conception of the future of public-health research is the result of administrative experience and recognition of the opportunities in this field for the advancement of knowledge and the improvement of living conditions. The essentials for this realization are the spirit of cooperation, trained scientists, and adequate funds. With the last mentioned, the university should be able to train workers and to cooperate with similar organizations, and in my opinion these are its essential functions in relation to the public health.

FIVE-YEAR INFANT MORTALITY STUDY IN BUFFALO, N. Y.

A summary of the information obtained from a 5-year infant mortality study in Buffalo, N. Y., 1922–1926, is presented by Dr. Frances M. Hollingshead, in the Sanitary Bulletin for August–September, 1927, published by the Buffalo Department of Health.

The infant mortality rate in Buffalo had been reduced from 165 per 1,000 live births in 1910 to 94 in 1921, but in 1922 the rate jumped to 102, and this reaction prompted a request from the city department of health for a study of the records by the Buffalo Foundation, to ascertain any facts which might be of additional value in the department's efforts to reduce infant mortality in the city.

The data on birth and infant death records of the city for the five years have been studied by wards and special districts, by nationality of parents, by cause of death and age at death, by hospitals at which the births occurred, and by physicians in attendance. Doctor Hollingshead gives the following summary of the information obtained in the study, a complete report on which is now being published:

1. Buffalo's infant mortality rates for the five years, exclusive of nonresidents, were: 102, 89, 84, 86, and 82 per 1,000, an average of 89. With nonresidents included the total rates were only slightly changed, 102, 90, 84, 87, and 84 per 1,000, an average also of 89.

2. Buffalo has eight wards in which the infant mortality rates for the five years have averaged over 100 infant deaths per 1,000 live births. The third ward is the section of the city with the highest rate for the five years, a loss of 125 babies per 1,000 births. The tenth ward is next highest, with an average rate of 118 per 1,000. The first ward ranked third highest, with an average of 116 per 1,000. The other average rates in this high group were 106 for both the ninth and twenty-seventh, and 102 for the fourteenth, sixteenth, and twenty-first wards.

3. The five lowest ward rates, all around 65 per 1,000, were found in the twelfth, thirteenth, eighteenth, nineteenth, and twentieth wards. The third

ward, with the highest record, 125 infant deaths per 1,000 births, just doubled the lowest rate, 62 per 1,000 in the twentieth ward.

4. In total figures, 62,261 babies were born alive in Buffalo during the five years, and 5,549 died before reaching 1 year of age. In this number there were 8,209 births and 326 deaths of babies of nonresident mothers.

5. Of the 5,549 infant deaths, 1,334, or 24 per cent, occurred within the first day; 2,327, or 42 per cent, by the end of the first week; 2,952, or 53 per cent, within the first month; and 4,475, or 81 per cent, during the first 6 months of age.

6. During the five years there occurred in Buffalo 6,666 live births and 810 deaths of babies under 1 year of age whose mothers had been born in Poland—a mortality rate of 122 per 1,000 births. For mothers born in Italy, there were 5,252 births and 459 infant deaths, a mortality rate of 87 per 1,000. For mothers born in Buffalo, the births totaled 27,967 and the infant deaths 2,378, a mortality rate of 85 per 1,000. For mothers born in the United States exclusive of Buffalo, the 14,235 births and 1,209 deaths give exactly the same rate as for Buffalo-born mothers, 85 per 1,000.

7. Fifty-six per cent of the deaths of babies of Buffalo-born mothers occurred under 2 weeks of age, whereas only 37 per cent of the babies of mothers born in Poland and 31 per cent of babies of mothers born in Italy occurred at this very early period. This larger percentage of deaths under 2 weeks of age of babies of Buffalo-born mothers was due to the greater loss from premature births, injuries at birth, and other conditions of very early infancy, which was 47 per cent, as compared with 26 per cent and 32 per cent of deaths, respectively, from such causes of babies of mothers born in Italy and in Poland.

8. Diseases of the respiratory system were more fatal to the babies of mothers born in Italy, 36 per cent of all deaths of babies born to this group of mothers dying from such causes, as compared with 18 per cent for babies of Buffalo-born mothers and 16 per cent for babies of mothers born in Poland.

9. The digestive diseases caused a higher proportion of deaths of babies of mothers born in Poland. The percentages of total deaths of babies of each group of mothers for digestive diseases were 38 for mothers born in Poland, 21 for mothers born in Italy, and 15 for Buffalo-born mothers.

10. Twelve per cent of the deaths of babies of Buffalo-born mothers were reported to have been due to malformations, as compared with 6 per cent among babies of mothers born in Poland and 5 per cent for babies of mothers born in Italy.

11. To negro mothers in Buffalo there were born 1,143 babies, with 137 deaths under 1 year of age, a mortality rate of 120 per 1,000 births.

12. Midwives attended 16 per cent of the births occurring in Buffalo during the five years. For each 100 babies attended by midwives there were 2 deaths under 2 weeks of age.

13. A total of 20,342 live births, or 33 per cent of all births during the five years, occurred in hospitals, and 909 of these babies died under 2 weeks of age, a mortality rate of 4.5 per 100. In two hospitals this average rate was more than doubled, 10.9 and 10.6 per 100 deliveries. In the three strictly maternity hospitals the rates were all below the average of 4.5 per 100 deliveries. The mortality rates in the 13 hospitals in Buffalo were found to have been 10.9, 10.6, 5.9, 5.6, 4.8, 4.5, 4.3, two 4.1, 3, 2.9, 2.4, and 1.3.

14. Twenty physicians attended 14,704 of the live births occurring in the five-year period, an average per physician of 700 births. Of these 14,704 babies, 680 died under 2 weeks of age, a mortality rate for the group of 4.6 per 100 live births; 7 of the 20 physicians had mortality rates in their practice exceeding this average. The physician with the highest mortality rate under 2 weeks

of age among babies attended by him at birth lost 8.6 babies in each hundred births. The lowest mortality rate in the group was 1.5 per 100 live births. Below the average loss for the group were 2 physicians with rates of 4.5; 1 each with rates of 4.3, 4.2, and 4; 3 with a rate of 3.5; 1 with a rate of 3.3; 1 each with a rate of 2.3, 2.1, and 2; and 1 with the lowest as stated, 1.5 per 100.

15. A second group of physicians, 33 in number, attended 9,520 live births during the five years, an average of 290 per physician, and lost 408 babies under 2 weeks of age, giving a mortality rate for this group of 4.3 per 100 deliveries; 16 of these 33 physicians had mortality rates above this average of 4.3 per 100. The greatest loss in the practice of any one of these 33 physicians was 10.6 per 100. The lowest rate was 1.6 per 100.

CURRENT WORLD PREVALENCE OF DISEASE

REVIEW OF THE MONTHLY EPIDEMIOLOGICAL REPORT ISSUED OCTOBER 15, 1927, BY THE HEALTH SECTION OF THE LEAGUE OF NATIONS' SECRETARIAT [1]

Cholera.—The cholera epidemic in Iraq, which began in the middle of July at Basra, seems to have been kept under control by the prompt precautions taken by the Iraq health service. Two months after the beginning of the outbreak, the infection had spread less than halfway to Baghdad, according to the October issue of the Epidemiological Report. In the previous epidemic, in 1923, Baghdad was infected within five days of the appearance of cases at Basra. The total number of cases reported in Iraq from July 24, to September 24, 1927, was 712, of which 339 were in the city of Basra. At Abadan, 241 cases were reported, and at Mohammerah 205 cases were reported in the six weeks from July 24 to September 3. In the three weeks following the latter date no cases were reported in either of these towns. The likelihood of further spread of the outbreak is diminishing with the passing of the hot season.

The number of cholera deaths reported in India remained at a high level without much change from the beginning of June to the middle of August (about 6,000 deaths weekly in the provisional returns). The incidence began to decrease in the United Provinces and in Bihar and Orissa from the middle of June, and in the Punjab after the middle of July; the outbreak in Madras Presidency seems to have reached its maximum in July. At the same time there was a marked increase in Bombay Presidency and in Hyderabad. After the end of August a decrease in the cholera incidence may be expected throughout India.

[1] From the Office of Statistical Investigation, United States Public Health Service.

TABLE 1.—*Cholera deaths Preported in the Provinces of India from May 22 to August 13, 1926 and 1927*

Province	1926			1927		
	May 23-June 19	June 20-July 17	July 18-Aug. 14	May 22-June 18	June 19-July 16	July 17-Aug. 13
Punjab and Delhi	6	24	11	715	2, 246	1, 261
Punjab States	0	7	5	99	484	218
United Provinces	494	548	552	6, 043	3, 286	2, 029
Bihar and Orissa	1, 673	1, 038	2, 415	8, 155	6, 710	5, 131
Bengal	541	397	589	1, 108	945	1, 329
Assam	710	154	22	430	312	267
Central India Agency	31	35	27	182	548	657
Central Provinces	267	232	850	1, 894	1, 705	1, 514
Madras Presidency	340	929	859	1, 912	3, 860	4, 327
Hyderabad	0	0	0	137	433	1, 750
Bombay Presidency	9	1	8	2, 522	2, 818	4, 105
States in Bombay Presidency	0	0	0	301	419	416
Burma	494	544	367	238	151	303
Other Indian States	2	6	13	3	271	35
Total	4, 567	3, 915	5, 728	23, 739	24, 188	23, 342

The incidence of cholera in French Indo-China declined throughout the summer months; the peak of the incidence in Tonkin, where the disease was most prevalent, was passed early in June. In Annam, the maximum incidence was not reached until August, but the number of new cases declined rapidly in September. The total incidence in French Indo-China during the first 20 days of September amounted to 658 cases; during the month of August, 2,155 cases were reported.

In Siam, the weekly number of cholera cases was about 20 from the beginning of May to the end of August. A few cases occurred in the Malay States after the middle of June, and 107 cases had been reported up to the end of August.

Various maritime towns in China became infected with cholera in August, notably Canton, Amoy, Shanghai, Foochow, and Ningpo. In September there was an outbreak at Wuhu on the Yangtze above Nanking; and, at Tientsin, in the week ended September 24, 17 cases of cholera reported.

Plague.—In most countries the incidence of plague was at low ebb in July and August. The Report states:

The most important exceptions were Senegal and Uganda, where the seasonal maximum frequently occurs in these months. In Senegal, where 129 cases were reported in June, the number of cases increased to 494 in July and to 622 in August. Dakar became infected early, and 128 cases were reported up to the end of August in the town and its district. The incidence for the year is considerably higher than in the two preceding years. The reported case mortality for July and August was 64 per cent in the whole colony. In Uganda, 958 plague cases and 780 deaths were reported during the eight weeks ended August 13, which will probably comprise the period of maximum incidence of the year. The number of cases reported during these weeks is much in excess of that notified during the corresponding period of any year since 1921, when Uganda was visited by very severe plague outbreaks.

The annual minimum incidence of plague in India was reached early in July. Up to August 20, human plague was practically absent in the whole of Northern India. There were a few cases from the second week of August in two districts of the Central Provinces. The incidence began to increase from early in August in the Madura district in the southern part and Bellary district in the central part of Madras Presidency, in Mysore and in the districts of Belgaum and Dharwar in Bombay Presidency, which both border on the Bellary district. Sporadic plague cases occurred also in many districts of Burma.

In Java, 438 deaths from plague were reported during the four weeks ended July 9, which is slightly more than the number reported during each of the three preceding four-weekly periods.

In Greece, one plague case was reported at Patras on September 3, and six cases were reported between the 15th and 29th of the same month at Plomarion on the island of Mytilene. Two cases were reported at Beirut, Syria, on September 10 and 17.

Ten plague cases and six deaths were reported in the district of Salsk in north Caucasus between August 28 and September 17. These were the only plague cases reported in recent months in the U. S. S. R.

In Egypt, three cases of plague were reported between August 14 and September 17. In Algeria there were five cases in August and one case in the first 10 days of September.

No plague case was reported during the first nine months of 1927 in Chinese ports reporting to the Singapore bureau. Both human and rat plague were reported to be prevalent in Fukien Province in May and sporadic cases were reported in Kwantung. The Report notes that "The Kwantung Government states that there has been an epidemic of pneumonic plague, causing many deaths, in the latter part of August in the district north of Hamintala (in Eastern Gobi in Inner Mongolia)."

Yellow fever.—The number of yellow fever cases increased in Senegal in September, when 20 fatal cases occurred; all were among the European population. Of these, 15 were at Dakar, 2 on the island of Goree, 2 at Thies, and 1 at Khombole. The center of the epidemic in the preceding year and a half was farther inland than Dakar.

In August, there was 1 case in Gambia, 2 cases on the Ivory Coast, and 1 case in Togo. There has been no fresh case reported at Porto Novo in Dahomey since July 2.

In the Gold Coast Colony, 98 cases of yellow fever were reported from February to July, and cases were still occurring at Accra and on the Cape Coast.

Smallpox.—Smallpox continued to spread in Algeria; 459 cases were reported in August, of which number 373 were in the department of Oran and 78 in the department of Algiers. In August of the years 1924, 1925, and 1926, there were 5, 73, and 114 cases, respectively. The disease has been less prevalent during the last two years in Tunis, where only 12 cases were reported in August. In Morocco, 76 cases were reported in August. In Egypt, also, the incidence is lower than it has been for several years; only 5 cases occurred during the four weeks ended August 26.

In England the incidence of smallpox remained somewhat higher than at the corresponding season of previous years, but no seasonal increase was indicated by the returns for September. On the European continent cases continued to be rare. In France the situation has improved markedly, and only 6 cases were reported in August as compared with 23 and 50 in July and June, respectively. In Italy 5 cases were reported in the four weeks ended July 17.

Smallpox is less prevalent in Mexico than in the preceding three years, but the severe type predominates; 911 deaths were attributed to this cause during the first half of 1927, as against 1,942 deaths during the corresponding period of 1926.

In Nigeria smallpox has been more prevalent than usual and, during the first seven months of 1927, 3,244 cases were reported, with a case fatality of 22 per cent.

In the Union of South Africa the smallpox cases occurring since the epidemic at Durban came to an end last November have been of the mild form. No deaths occurred among the 40 cases reported during the first seven months of 1927.

Typhus and relapsing fever.—September is usually the month of lowest incidence of typhus fever in Eastern Europe, where the winter increase begins in the fourth quarter of the year. The incidence of this disease during the first nine months of 1927 was relatively low everywhere in this area. Relapsing fever has all but disappeared from Europe except in certain areas of the Union of Socialist Soviet Republics; it decreased markedly in the Ukraine.

Enteric fever.—The prevalence of enteric fever during August and the first half of September was lower than the normal for that season in countries of northwest Europe, including the Scandinavian countries, Finland, Germany, the Netherlands, and Belgium. In Switzerland, Austria, and Hungary, the incidence was about the same as last year. East and south of these countries the incidence has been higher than last year.

In Poland there were 2,477 cases during the four weeks ended September 10, as compared with 2,002 during the corresponding period of the preceding year. In August 1,027 cases were reported in Czechoslovakia, and 697 in the Kingdom of the Serbs, Croats, and Slovenes, as compared with 547 and 322 cases, respectively, in August, 1926.

Typhoid fever spread rapidly in Italy in July; 4,277 cases were reported during the four weeks ended July 31, as compared with 2,001 during the corresponding weeks of the preceding year, the last figure being about normal for the season.

In France and England the returns were also somewhat higher than in the preceding year, though the incidence, especially in the latter country, is not excessive.

Dysentery.—Dysentery has become less prevalent in Germany in recent years; 546 cases were reported during the four weeks ended September 10 as compared with 803 and 1,229 cases, respectively, in the corresponding period of the preceding two years.

In Poland cases of dysentery increased in the last two years, although the incidence was still much lower than in 1924 and earlier years. During the four weeks ended September 10 of the current year 1,600 cases were reported. The disease has been most prevalent in Galicia.

In Rumania and the Kingdom of the Serbs, Croats, and Slovenes dysentery was more than twice as prevalent in August as in the corresponding month a year ago; but there was no serious epidemic prevalence.

In Morocco, as in many subtropical or tropical countries, dysentery is a serious cause of illness; 8,855 cases were reported during the first eight months of 1927. The maximum incidence occurred in May.

Acute poliomyelitis.—The reported incidence of poliomyelitis in European countries for August and September showed a prevalence above the normal in several countries, particularly in Germany and Rumania. The Report states:

The first severe outbreak in Europe occurred at Bucharest in Rumania in June and July, spreading gradually to other parts of the country.

In Germany an outbreak began early in July in the Province of Merseburg (Prussian Saxony), but did not reach its maximum until the middle of September. It spread during the last week of July to the neighboring Province of Leipzig, in Saxony, where the number of cases continued to increase up to the middle of September. In these two Provinces 255 cases were reported between July 3 and September 17 which have together a population of 2,684,000. There were during the same period 503 cases in the remainder of Germany in a population over twenty times greater. These districts are thus very clearly the center of the outbreak. In a large area of central Germany the incidence is between 1 and 3 cases per 100,000 population, while it is lower in the more distant Provinces.

Acute poliomyelitis was more prevalent in England and Wales in 1926 than in any previous year; 1,159 cases and 176 deaths were reported during the year, giving a case mortality rate of 15.2 per cent. If 138 cases and 59 deaths reported as polioencephalitis are included, the case mortality rate is increased to 18.1 per cent. The incidence remained above normal during the first quarter of 1927, owing to the slow decrease of the 1926 outbreaks, which reached their maximum only late in October. The seasonal minimum incidence was reached in April and May. The number of cases has increased markedly since July and is higher than in previous years except 1926, the incidence of which was not equaled during any week up to the end of September. The incidence of poliomyelitis was above the normal in Scotland.

Scarlet fever.—The reported incidence of scarlet fever in September in most European countries differed very little from that for the corresponding season last year. The incidence was lower than in the preceding two years in Sweden, Denmark, Latvia, Lithuania, and Poland. More cases than were reported a year ago were notified

during the summer and autumn in England and Germany. The Report states:

In England and Wales there were 6,711 cases during the four weeks ended September 24, as compared with 5,566 during the corresponding weeks of 1926. In Germany 6,132 cases were reported during the four weeks ended September 10, as against 4,367 during the corresponding period of the preceding year. This is the fourth year in which the incidence of scarlet fever has increased in Germany; it may be a good sign, however, that the increase of the number of cases in the last four-week period (September 10) this year over the preceding four-week period has been 19 per cent, while the corresponding figure last year was 45.2 per cent.

Scarlet fever has since the beginning of the year been more prevalent in Australia than for some years past. The incidence normally decreases from the beginning of June, but this year there was a new increase in July (which corresponds to our January); 926 cases were reported during the four weeks ended July 30, as compared with 468 cases during the corresponding period of the previous year.

Natality and general mortality.—The birth and death rates in England, France, and Germany since 1901 are shown in the accompanying table. The birth rate in each country was lower in 1926 than in the preceding year. The birth rate in Germany has been declining in recent years more rapidly than in France, and the difference in the rate between the two countries is becoming slight. The decline in the death rate in Germany in recent years has been remarkable and is also much greater than the decline in the death rate in France. Part of the decline in the death rate in Germany is a result of the smaller proportion of infants in the population.

TABLE 2.—*Birth and death rates per 1,000 of the population in England, France and Germany from 1901 to 1926*

BIRTH RATE

Country	1901-1904	1910-1914	1920-1924	1925	1926
England	28.4	24.3	21.3	18.3	17.8
Germany	34.7	28.2	23.1	20.6	19.5
France	21.4	19.0	20.1	19.1	18.8

DEATH RATE

Country	1901-1904	1910-1914	1920-1924	1925	1926
England	16.2	13.9	12.2	12.2	11.6
Germany	19.9	16.6	13.9	11.9	11.7
France	19.6	18.1	17.5	17.7	17.5

POLIOMYELITIS CASES REPORTED BY STATES, OCTOBER 16 TO NOVEMBER 12, 1927, AND CORRESPONDING WEEKS OF 1925 AND 1926

The following table gives a comparison of the telegraphic reports from State health officers for the four-week period from October 16 to November 12, 1927, with the reports from the same sources for the corresponding period of the years 1925 and 1926. This table is a

continuation of tables appearing in the Public Health Reports, October 7, 1927, page 2452, and November 4, 1927, page 2726. Reports for the week ended November 19, 1927, will be found on page 2919 of this issue.

Cases of poliomyelitis reported by State health officers October 16–November 12, 1927, compared with reports for the corresponding weeks of 1925 and 1926

State	Week ended—											
	Oct. 22, 1927	Oct. 23, 1926	Oct. 24, 1925	Oct. 29, 1927	Oct. 30, 1926	Oct. 31, 1925	Nov. 5, 1927	Nov. 6, 1926	Nov. 7, 1925	Nov. 12, 1927	Nov. 13, 1926	Nov. 14, 1925
Alabama	2	1	2	1	0	0	0	1	1	1	0	2
Arizona	4	0	0	1	0	0	0	0	0	0	0	0
Arkansas	2	2	0	2	0	1	1	0	0	1	1	0
California	32	6	9	30	1	4	35	5	11	23	2	15
Colorado	7	0	0	......	0	1	7	1	0	6	0	0
Connecticut	9	1	1	9	4	0	7	0	1	3	0	1
Delaware	0	0	0	0	0	0	1	0	0	0	0	0
District of Columbia	3	0	0	1	1	0	0	1	1	......	0	1
Florida	0	0	1	3	0	0	1	0	1	2	0	0
Georgia	1	0	2	0	0	2	0	0	2	0	4	0
Idaho	0	0	0	2	0	......	8	0	......	11	0	......
Illinois	37	5	15	25	4	7	14	2	11	18	4	0
Indiana	11	2	2	19	2	3	11	2	7	7	0	3
Iowa	......	0	9	8	0	......	3	0	......	7	0	5
Kansas	8	0	5	14	3	6	4	1	4	3	1	2
Louisiana	2	0	0	2	0	1	0	1	3	0	0	2
Maine	13	1	0	6	1	0	5	0	0	7	3	1
Maryland	2	2	19	3	1	4	1	1	1	2	0	1
Massachusetts	99	9	10	60	6	4	56	10	5	38	7	3
Michigan	18	0	0	18	0	0	14	0	0	8	0	0
Minnesota	8	0	17	6	2	18	3	0	5	2	0	4
Mississippi	2	2	0	0	1	0	3	0	0	0	0	0
Missouri	9	1	2	12	0	4	7	0	1	6	0	1
Montana	2	0	3	0	0	0	1	0	0	1	0	0
Nebraska	5	0	16	14	1	7	10	3	2	5	1	3
New Jersey	11	3	3	8	1	2	9	2	4	3	2	1
New Mexico	7	0	0	3	0	1	2	0	1	3	0	1
New York	32	23	28	31	14	6	23	9	23	18	12	11
North Carolina	1	2	1	1	2	0	2	3	2	0	2	0
North Dakota	0	0	3	0	0	1	1	0	3	......	0	1
Ohio	46	......	......	51	......	......	54	......	......	26	......	......
Oklahoma	10	1	1	7	0	0	3	2	1	3	2	1
Oregon	31	1	0	26	1	0	20	1	2	22	0	0
Pennsylvania	45	9	......	18	3	......	18	6	6	27	2	0
Rhode Island	3	2	......	4	......	0	3	0	1	2	0	0
South Carolina	3	3	3	2	10	4	4	2	2	1	4	0
South Dakota	5	0	2	6	0	2	7	1	0	6	1	6
Tennessee	7	0	......	2	0	......	4	0	......	5	0	......
Texas	9	0	1	3	0	0	11	2	2	5	0	1
Utah	0	0	1	2	1	0	2	0	1	0	0	0
Vermont	7	0	5	6	0	2	......	0	2	......	0	4
Virginia	0	0	1	2	0	0	0	0	0	1	0	0
Washington	22	0	7	21	0	9	26	1	4	26	0	1
West Virginia	17	0	0	9	2	0	12	0	0	8	0	......
Wisconsin	8	5	7	9	4	14	8	2	7	9	3	6
Wyoming	1	0	0	1	0	0	0	2	0	1	1	1

PUBLIC HEALTH ENGINEERING ABSTRACTS

Eradication of Salt Marsh Mosquitoes. Edward Stuart and N. M. Stover. *American Journal of Public Health,* vol. 17, No. 7, July, 1927, pp. 704–707. (Abstract by H. B. Hommon.)

Mosquito-abatement work in California is carried on under the mosquito abatement act of 1915. To organize a district it is necessary to present to the board of county supervisors a petition with the signatures of 10 per cent of the registered voters of the district. A district may be any size up to that of a county and may include municipalities that wish to join in the work. The board of county supervisors, after approving a district, appoint a board of trustees who serve without pay and have complete charge of all abatement work. Tax levies for this work can not exceed $0.10 on $100 assessed valuation.

There are five abatement districts around the San Francisco Bay, which include 120 miles of water frontage and 443 square miles of land consisting of hills and marshes. There are 12 other mosquito-abatement districts in the State which were organized for malaria control. The districts around San Francisco Bay spend approximately $50,000 a year.

The chief problem around the San Francisco Bay is the control of the *Aëdes dorsalis* and *Aëdes squamiger*. These two species breed in salt or brackish water and have a range of flight extending 15 miles from any possible breeding ground.

The open marshland around the bay is easily controlled by ditches, 18 inches wide and 1 to 2 feet deep, that permit a constant flow with the tides and allow small fish to enter and devour the larvæ. The reclaimed land, however, presents many difficult problems. In a general way it is handled as follows: (1) Tide gates are used to let out drainage water at low tide and prevent water returning at high tide; (2) cracked land is best taken care of by plowing, dragging, and disking; (3) lowland, either natural or caused by shrinking in reclaiming, is best controlled by pumping; and (4) breeding places which can not be drained are oiled with a mixture of equal parts of crude oil and stove distillate. Crude oil costs 5 cents per gallon and stove distillate 8 cents. Power sprayers mounted on trucks are used, which throw the oil to distances varying from 50 to 100 feet.

Carbon Tetrachloride as Applied for the Extermination of Mosquitoes and Flies. Kenzo Takashima *Journal of the Public Health Association of Japan*, vol. 3, No. 6, June, 1927, pp. 1–9. (Abstract by Fred Almquist.)

In order to use carbon tetrachloride to exterminate mosquitoes, flies, etc., the best method is to add cresol-soap solution. But the addition of soap decreases the value of night soil as manure in that it kills certain kinds of vegetables.

By experimenting it was found that a special solution of cresol soap containing little water was most suitable. In mixing with carbon tetrachloride a sol is formed which becomes a gel on dilution under certain conditions. This mixture, when diluted with water, forms a milky dilution until a certain quantity of cresol-soap solution is added.

Biological and Physical Properties of Activated Sludge. F. W. Harris, T. Cockburn, and T. Anderson. *Water Works*, vol. 66, No. 1, January, 1927, pp. 24–29. (Abstract by E. A. Reinke.)

This paper defines activated sludge, describes the analogy between nature's method and artificial processes of sewage transformation, discusses the predominant organisms and their significance, the changes due to enzymic action, and principles in the utilization of sludge. Experimental work at Shieldhall is described in considerable detail. The minimum effective percentage of sludge for a contact period of four hours was found to be 8 per cent. The product of the percentage of sludge and the hours of contact is called the "coefficient of interfacial contact," and experimental work is given in tabular form showing that for a coefficient of 30, with contact periods of one-half hour to 12 hours, and sludge percentages of 60 to 2½, uniform results were obtained. At Shieldhall, treatment for one hour will be used for partial purification before discharging to tidal waters. The advantages of reactivation, particularly with partial treatment as at Shieldhall, are stressed.

Dissolved oxygen absorbed by sludge was determined by filling half-Winchester bottles with aerated water of known dissolved oxygen content, adding 5 per cent of the bottle capacity of sludge (settled one hour) agitating continuously for half an hour, then settling 30 minutes and estimating the unabsorbed dissolved oxygen content.

Rate of settlement of sludge depends on the density, or the total solids contained in a definite volume of sludge. The method of Arden and Lockett is used and is described as follows: "Samples equal in volume were collected at a fixed hour at different points in the aeration channels, thoroughly mixed, and their combined volume, representative of the contents of the aeration tank, was poured into a 1,000-c. c. cylinder. After one hour's settlement the supernatant liquid was siphoned off, the remaining sludge well mixed, and 100 c. c. pipetted into weighed basins for the estimation of the total solids."

Charts showing the density of sludge, volume, percentage, and mineral matter are given, together with rainfall records. The relation between aeration and density is discussed and the authors conclude with the following statement: "Our experience has proved that density of sludge is a phase of the process, the study of which can only lead to increased efficiency, and may possibly prove to be of material advantage in solving the problem of economic dewatering of the sludge."

Sewage-Treatment Plants in Illinois Sanitary Districts. Samuel A. Greeley. *Water Works*, vol. 66, No. 1, January, 1927, pp. 17–25. (Abstract by E. A. Reinke.)

This is a detailed account of the operations of the sanitary districts of Illinois under the act of 1917. The act and amendments are summarized. Statistics are given in several tables. Sewage flows are given for various districts showing average flows of 75 to 125 gallons per day. Sewages vary in composition from weak combined sewage to domestic sewage plus strong starch wastes. Intercepting sewers have been proportioned to take normal flow and first run-off. Capacities and costs are given in accompanying tables, which are complete and detailed. Costs for complete treatment vary from $9.46 to $13.40 per capita.

Sewage Disposal in Great Britain. J. D. Watson. *Water Works* vol. 66, No. 9, September, 1927, pp. 367–370. (Abstract by W. R. Schreiner.)

This article contains a discussion of the various methods possible.

Dilution.—Should be thought of first, in all cases. Best results are obtained by multiple nozzles discharging into comparatively still waters or by a few outlets into tidal or current channels.

Land irrigation.—Where there is available at least 1 acre per 100 persons, an efficiently worked sewage farm is still considered among the best methods. The effluents are free from micro-organisms, almost uniformly good and clear, with a very low nitrate figure.

Contact beds.—Contact beds are not now considered sound or economical, or as reliable as other methods. Liability of clogging, less aeration, more space required, are bad features. Many old contact beds are being replaced by newer methods.

Percolating filters.—Advantages: Moderate first cost, low operating cost, clear, nonputrescible effluent. Disadvantages: Fly nuisance, nauseating odors. Wastes from gas works, dairy factories, sugar-beet factories, etc., produce inhibitory effects upon the purification processes of this type.

Activated sludge has lost its position as the long sought cure-all. Advantages: Low first cost, scientific soundness of principle, less space requirement. Disadvantages: Can not properly handle all types of wastes, is extremely sensitive to changes in character of wastes, requires more knowledge and more skillful management. In this process mechanical agitation is a strong competitor of

the earlier aeration types of mixing. This process is a most valuable adjunct to existing contact beds and percolating filters, doubling the capacity and removing odors. It makes a valuable additional step in purification when placed between sedimentation tanks and percolating filters. Imhoff tanks are not in favor, though deserving of more attention.

Sludge disposal.—Lagooning is practiced in majority of places; smell nuisance greatest drawback; merits of separate digestion tanks in producing a good sludge not generally recognized in Great Britain; activated sludge presents a serious problem in dewatering.

Storm water.—Recommendations of royal commission that storm-water storage should be equal to six hours of dry weather flow are now out of date; storage equal to 18 to 24 hours' dry weather flow more nearly correct, in these days of impervious roads.

In conclusion it may be said that pollution of streams is now due rather to lack of money than to indifference such as prevailed some years ago. The sewage problem has not been solved, but public opinion becomes more and more insistent on the employment of best possible means of purifying wastes.

Automatic Control of Sewage at Syracuse Sewage Treatment Plant. E. F. Sipher. *American City*, vol. 37, No. 1, July, 1927, pp. 6–9. (Abstract by A. S. Bedell.)

The sewage-treatment plant at Syracuse, N. Y., contains several unusual features. The most noteworthy is the method of controlling the rate of flow of sewage through the grit chamber, by use of pumps operated by automatically controlled variable speed motor to maintain the velocity of the sewage within close limits without excessive loss of head.

City topography necessitates pumping the sewage to the settling tanks. Sewage enters the works at an overflow chamber connected to an overflow conduit direct to the lake for volumes in excess of 55 million gallons daily. The sewage passes through coarse bar screens to a three-channel grit chamber, then through fine screens, mechanically raked, and into pump well, thence by three 24-inch pumps of 18 million gallons daily capacity each (with a fourth pump in reserve) to settling tanks provided with Dorr clarifiers. Sludge is pumped through a 4-inch main, and buried with wastes of Solvay Process Co. Entire plant is controlled from an 18-panel switchboard which can be superseded by manual control in emergencies. Automatic control devices are described in some detail. Automatic measuring and recording devices are also a feature of the plant.

The Many Algal Growths that Annoy Water Works. Anon. *Water Works Engineering*, vol. 80, No. 18, August 31, 1927, pp. 1256 and 1283. (Abstract by Frank Raab.)

Fresh-water algæ are classified into three groups: (1) The red algæ group, which contains 17 varieties; (2) the green algæ division, which has 356 species; and (3) the blue-green algæ group, which numbers 232 plants. The odor produced by the various algæ may be sweet, grassy, geraniumlike, fishy, or obnoxious. Algæ must have CO_2, nitrogen, and sunlight for their growth and development. The nitrogen may be obtained from the nitrates in the water. Copper sulphate is now widely used for the destruction of algæ. Chlorine is also used in some places. Copper is probably not a true poison. Doses as high as 15 grains have been prescribed in medicine.

Lethal doses of copper sulphate

Algæ	Lethal dose of copper sulphate, parts per million	Pounds of copper sulphate, per million gallons
Synedra	0.20	1.7
Uroglena	.50	4.2
Asterionella	.10	.8

Amounts of copper present in well-known foods

Food	Cu present as a metal	$CuSO_4$, parts per million
Almonds	36.8	145.0
Milk	1.6	6.3
Cucumbers	35.0	177.0
Potatoes	2.8	11.0
Strawberries	8.0	31.4

Lethal doses to fish

Fish	$CuSO_4$, parts per million	$CuSO_4$, pounds per million gallons
Trout	0.14	1.2
Carp	.33	2.8
Pickerel	.40	3.5
Goldfish	1.50	4.2
Perch	.67	5.5
Bass	2.00	16.6

How Quality of Water Affects Industries. W. D. Collins. *Water Works Engineering*, vol. 80, No. 13, June 22, 1927, p. 927. (Abstract by Fred Almquist.)

Early development in manufacturing took place in the northeastern part of the United States. It happened that most of these industries were able to obtain soft water. With the shifting of the center of population westward toward the hard-water region, it was some time before the accompanying industrial activity rose very greatly. The great rise came not from a shifting of plants westward, but more by the development of new industries.

The quality of the water as affecting the locating of steel mills is of slight consideration, while for wool and silk goods excellent water is necessary. Cotton manufacturing, formerly entirely in New England, now is found in parts of the South where soft water is found. Where it is a question of steam, the water must be of soft quality.

Nearly all public water supplies are now safe to drink, but there is room for large improvement with reference to industrial use, in knowledge of composition, treatment, and control.

Spore-bearers in the Spavinaw Water Supply. R. L. Ginter, *Journal American Water Works Association*, vol. 17, No. 5, May, 1927 pp. 591–594. (Abstract by L. M. Fisher.)

Water is collected in a 20-billion gallon reservoir from a 400 square mile watershed about 65 miles east of Tulsa, Okla. It flows to within 4 miles of the city, where it is chlorinated, aerated, and pumped to an inclosed high-pressure reservoir.

The raw water had a *B. coli* index of 0.1 per cubic centimeter. The average 37° agar count was 490. The *B. coli* index does not vary much throughout the year, whereas the count increases in the warm months and decreases in the winter season.

Twenty-seven per cent of the samples of chlorinated tap water gave positive results that did not confirm. In all cases gas formation in these tubes was more rapid than in control tubes of untreated water, indicating that organisms in the untreated water which are killed by chlorine inhibit, to a certain extent, the spore bearers. It was found that neither 17 parts per million of chlorine nor 19 parts per million of copper (in terms of metallic copper) killed the organism. The organism is similar to the one described by Norton and Weight. No sanitary significance is attached to it. Evidence that 5 per cent bile inhibits *B. coli* has not been obtained.

It is suggested that a change in the presumptive test involving a low per cent bile medium, similar to the one used by Dunham, McCrady, and Jordon, would result in a saving of routine time and increase the dependence that water works men place in the presumptive test.

The Effects of Storage upon the Quality of Water. A. Gordon Gutteridge. *Health*, Commonwealth of Australia, vol. 5, No. 2, March, 1927, pp. 35–38. (Abstract by L. M. Fisher.)

The quality of stream water depends upon the proportion of ground water to run-off water present. In dry weather there is proportionately more ground water than surface water in the stream, and proportionately greater quantities of inorganic salts are present. This is conducive to development of algæ, which, in the presence of sunlight, because of their chlorophyl, are able to combine these salts with dissolved carbon dioxide and thus obtain their food supply.

Ninety-nine per cent of the normal strains of pathogenic bacteria disappear at the end of a week's storage, and all of them at the end of a month. Water initially good obtained from an upland source will not be improved much by storage; in fact a deterioration may result. Water from a large river will almost invariably be improved.

In general, under these conditions, storage will result in decided decreases in (1) concentration of organic and inorganic solids by sedimentation; (2) concentration of organic impurities by precipitation and oxidation; (3) color in upper layers by oxidation and the bleaching action of sunlight; (4) concentration of hardness-forming salts due to loss of CO_2 by diffusion, on utilization by plants, and by absorption of these salts by plants and animals during growth; (5) the number of bacteria, by sedimentation, exhaustion of food supplies, and utilization as food by other forms of life.

A New Agar-Dye Differential Medium for the Colon-Typhoid Group—With Special Reference to Its Use in Water Analysis. A. J. Salle. *Journal of Infectious Diseases*, vol. 41, No. 1, July, 1927, pp. 1–8. (Abstract by E. A. Reinke.)

After reviewing the literature on differential media the author describes experimental work based on the ability of *B. coli* to form more acid from sugar than *B. aerogenes*, provided the greatest amount added is just sufficient for *B. coli* to produce a final pH of 5.0. A tritration curve is given. The author's summary follows:

A new agar-dye differential medium for the identification of the members of the colon-aerogenes-typhoid group is described, containing peptone (Difco), 5 gm.; K_2HPO_4, 5 gm.; KH_2PO_4, 1 gm.; distilled water 1,000 c. c.; agar, 20 gm.; lactose, 5 gm.; erythrosin (2 per cent aqueous), 20 c. c.; methylene blue (1 per cent aqueous), 10 c. c.; bromcresol purple (1 per cent aqueous), 20 c. c.; and by its use two tests are incorporated in one operation, thereby shortening the period of a complete water analysis by 24 hours. Glucose broth cultures may be dispensed with. *B. coli* and *B. aerogenes* are sharply differentiated on this medium because of distinct differences in their carbohydrate metabolism.

Methods of Estimating Pollution in Tidal Estuaries and Water Reservoirs. David Ellis. *The Surveyor*, vol. 71, No. 1850, July 8, 1927, pp. 37–38. (Abstract by H. N. Old.)

In this article the writer treats of the composition of organic matter in water, with its potentialities of pollution, and the two principal methods of detecting and measuring the amount of polluting substance—the chemical and the biological tests.

The chemical determinations, usually the albuminoid ammonia and the "oxygen absorbed" tests, are briefly outlined as to purpose, with the explanation that while the former will give definite estimation of the amount of organic matter present in a given unit of water, the connection between this and the determination of the amount of organic matter capable of suffering putrefactive change, with which the water engineer is mainly concerned, is very vague.

In discussing the "oxygen absorbed" test the author states that "the assumption that the more oxidizable organic matter is also more putrefiable is not warranted."

The estimate of total nitrogen contained in a measured quantity of water is referred to as probably the best of the chemical tests if it were not for the length of time required for its completion and the fact that it suffers from the defect inherent in all chemical tests—that the amount of nitrogen-containing matter is not a measure of the amount of putrefiable matter.

The biological tests for total bacteria and the presence of colon bacilli are discussed. With proper interpretation they are direct estimations of the very matter concerning which the water engineer requires information. The author treats of the differentiation to which consideration must be given in the matter of total bacteria, the greater part of which are probably harmless, and the evidence of colon bacilli as indicating sewage pollution.

The extension of biological methods by use of the determinations of iron bacteria, sulphur bacteria, and the organisms which have been found in black-mud investigations, in the matter of judging the source of a domestic water supply, is suggested and discussed.

Pollution of Boundary Waters. G. H. Ferguson. *Canadian Engineer*, vol. 52, No. 13, March 29, 1927, p. 384. (Abstract by R. E. Thompson.)

This is a brief general discussion of the pollution of the water of the Great Lakes. So efficacious is the self-purifying power of water that, with the exception of a margin along the shores and the areas adjacent to the mouths of the tributary rivers, the water of the Great Lakes, when unaffected by vessel pollution, is pure. The discharge of sewage from boats seriously pollutes the water in the lines of vessel traffic. Turbidity may usually be avoided if intake is placed in deep water at a sufficient distance from shore. There has been a remarkable reduction in typhoid in Great Lakes communities during the last 25 years, and high explosive rates, which indicate epidemics, have been very much reduced. By the terms of the British North America act, jurisdiction over navigable waters of Canada is vested exclusively in the Federal Government at Ottawa. The public health act of the Province of Ontario provides for action that may be taken in regard to pollution of springs, wells, ponds, etc., used as a source of public water supply.

Disinfection of New Mains. Chas. H. Eastwood. *Water Work*, vol. 66, No. 9, September, 1927, p. 363. (Abstract by W. R. Schreiner.)

This paper gives detailed instructions for using liquid chlorine. Apparatus improvised from spare duplicate parts is described. The recommended dosage is 10 to 20 parts per million applied at inlet end of the main, through which the dosed water is allowed to flow until water issuing from outlet end shows an orange red with orthotolidine. The dosed water is then allowed to stand for several hours before the main is flushed out with fresh water.

DEATHS DURING WEEK ENDED NOVEMBER 12, 1927

Summary of information received by telegraph from industrial insurance companies for week ended November 12, 1927, and corresponding week of 1926. (From the Weekly Health Index, November 16, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Nov. 12, 1927	Corresponding week, 1926
Policies in force	69, 066, 180	65, 911, 828
Number of death claims	10, 208	11, 240
Death claims per 1,000 policies in force, annual rate	7. 7	8. 9

Deaths from all causes in certain large cities of the United States during the week ended November 12, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, November 16, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Nov. 12, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Nov. 12, 1927 [2]
	Total deaths	Death rate [1]		Week ended Nov. 12, 1927	Corresponding week 1926	
Total (67 cities)	6, 684	11. 9	[3] 12. 2	649	[3] 706	[4] 54
Akron	82			4	4	43
Albany [5]	28	12. 2	14. 1	1	0	21
Atlanta	54			7	11	
White	28			8	3	
Colored	26	([6])		4	8	
Baltimore [5]	214	13. 6	15. 6	19	31	60
White	152		14. 4	10	25	40
Colored	62	([6])	22. 3	9	6	141
Birmingham	68	16. 5	15. 1	7	4	
White	22		13. 9	2	4	
Colored	46	([6])	17. 0	5	0	
Boston	207	13. 6	13. 4	15	22	42
Bridgeport	20			1	2	17
Buffalo	135	14. 7	13. 6	16	21	67
Cambridge	25	10. 5	9. 8	3	2	53
Camden	26	10. 2	8. 4	4	6	68
Canton	25	11. 5	11. 9	3	3	72
Chicago [5]	684	11. 5	10. 2	73	62	63
Cincinnati	143	18. 1	15. 2	16	9	97
Cleveland	188	10. 0	10. 3	20	20	54
Columbus	76	13. 6	16. 4	9	9	84
Dallas	43	10. 7	12. 1	4	2	
White	37		11. 2	4	2	
Colored	6	([6])	17. 6	0	0	
Dayton	41	11. 9	10. 6	3	7	50
Denver	94	16. 9	11. 3	8	7	
Des Moines	34	11. 9	16. 1	3	8	53
Detroit	285	11. 1	10. 7	41	45	63
Duluth	22	10. 0	8. 3	0	2	0
El Paso	35	16. 0	15. 3	3	8	
Erie	26			2	3	43
Fall River [5]	26	10. 2	14. 3	3	2	51
Flint	15	5. 5	11. 5	3	4	47
Fort Worth	29	9. 2	9. 8	5	8	
White	23		8. 6	5	3	
Colored	6	([6])	18. 9	0	0	
Grand Rapids	87	12. 1	9. 8	4	1	59
Houston	71			13	7	
White	41			7	5	
Colored	30	([6])		6	2	
Indianapolis	96	13. 4	14. 1	4	9	30
White	77		13. 9	2	8	17
Colored	19	([6])	15. 6	2	1	121
Jersey City	65	10. 5	12. 1	7	7	53

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 66 cities.
[4] Data for 62 cities.
[5] Deaths for week ended Friday, Nov. 11, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

Deaths from all causes in certain large cities of the United States during the week ended November 12, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, November 16, 1927, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended Nov. 12, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Nov. 12, 1927
	Total deaths	Death rate		Week ended Nov. 12, 1927	Corresponding week 1926	
Kansas City, Kans	30	13.4	8.9	3	2	63
White	19	-	7.6	1	2	25
Colored	11	(6)	15.3	2	0	290
Kansas City, Mo	94	12.8	14.3	7	13	-
Knoxville	27	13.8	-	2	-	-
White	21	-	-	2	-	-
Colored	6	(6)	-	0	-	-
Los Angeles	240	-	-	24	23	68
Louisville	84	13.7	12.9	7	7	58
White	62	-	12.1	3	7	28
Colored	22	(6)	17.6	4	0	375
Lowell	26	12.3	9.5	4	3	85
Lynn	14	7.0	10.0	1	0	26
Memphis	55	16.0	17.4	4	8	-
White	28	-	14.2	2	3	-
Colored	27	(6)	23.1	2	5	-
Milwaukee	93	9.1	11.0	18	9	83
Minneapolis	81	9.6	10.2	4	7	23
Nashville	42	15.9	14.1	6	7	-
White	27	-	9.6	5	5	-
Colored	15	(6)	25.4	1	2	-
New Bedford	15	6.5	13.1	3	5	57
New Haven	27	7.6	12.9	2	2	28
New Orleans	102	12.5	20.6	15	16	-
White	60	-	16.3	10	8	-
Colored	42	(6)	33.0	5	8	-
New York	1,284	11.2	12.0	110	116	47
Bronx Borough	153	8.6	8.2	10	11	32
Brooklyn Borough	427	9.8	10.6	41	45	43
Manhattan Borough	521	15.0	16.6	44	48	53
Queens Borough	141	9.1	8.5	13	11	57
Richmond Borough	42	14.9	15.0	2	1	38
Newark, N. J	90	11.1	12.7	9	14	45
Oklahoma City	27	-	-	3	2	-
Omaha	44	10.5	11.4	5	5	57
Paterson	32	11.6	8.4	2	3	36
Philadelphia	407	10.4	11.8	37	64	50
Pittsburgh	170	13.8	12.4	18	11	62
Portland, Oreg	61	-	-	4	5	43
Providence	64	11.9	11.4	9	3	77
Richmond	52	14.1	18.2	6	10	78
White	27	-	16.0	2	6	40
Colored	25	(6)	23.5	4	4	147
Rochester	73	11.7	10.9	5	6	42
St. Louis	228	14.2	11.7	23	17	-
St. Paul	42	8.8	10.1	5	5	46
Salt Lake City [5]	35	13.4	15.2	4	7	64
San Antonio	54	13.3	12.2	7	7	-
San Diego	26	11.8	15.1	1	1	22
San Francisco	163	14.8	12.7	2	4	12
Schenectady	26	14.6	14.0	1	7	30
Seattle	72	-	-	5	1	53
Somerville	16	8.2	8.8	2	1	58
Spokane	31	14.8	11.5	1	1	24
Springfield, Mass	31	11.0	11.1	5	3	79
Syracuse	40	10.6	11.5	5	4	65
Tacoma	35	17.1	14.8	5	3	117
Toledo	68	11.7	11.7	3	6	29
Trenton	34	12.9	18.2	6	4	106
Utica	20	10.1	10.2	2	4	47
Washington, D. C	132	12.7	13.8	7	13	41
White	83	-	10.3	5	5	43
Colored	49	(6)	24.2	2	8	36
Waterbury	11	-	-	2	4	47
Wilmington, Del	27	11.2	16.4	4	6	99
Worcester	42	11.2	11.6	4	8	48
Yonkers	12	5.3	10.8	5	3	115
Youngstown	46	14.2	9.2	6	2	80

[5] Deaths for week ended Friday, Nov. 11, 1927.

[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, [illegible]; Nashville, 30; New Oreleans, 26; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended November 19, 1927

DIPHTHERIA	Cases
Alabama	93
Arizona	23
Arkansas	31
California	183
Colorado	30
Connecticut	46
Delaware	2
Florida	37
Georgia	43
Idaho	2
Illinois	237
Indiana	75
Iowa [1]	15
Kansas	42
Louisiana	40
Maine	5
Maryland [1]	48
Massachusetts	135
Michigan	129
Minnesota	48
Mississippi	51
Missouri [2]	67
Montana	1
Nebraska	17
New Jersey	201
New Mexico	10
New York	365
North Carolina	133
Ohio	111
Oklahoma [3]	132
Oregon	16
Pennsylvania	289
Rhode Island	15
South Carolina	73
South Dakota	1
Tennessee	70
Texas	108
Utah [1]	10
Washington	13
West Virginia	35
Wisconsin	37
Wyoming	4

INFLUENZA	Cases
Alabama	80
Arkansas	78
California	11
Connecticut	10
Florida	2
Georgia	89
Illinois	15
Indiana	9
Kansas	4
Louisiana	15
Maine	6
Maryland [1]	28
Massachusetts	8
Michigan	4
Minnesota	1
Missouri [2]	7
Nebraska	4
New Jersey	11
New York [4]	15
Ohio	5
Oklahoma [3]	53
Oregon	17
South Carolina	495
South Dakota	1
Tennessee	53
Texas	60
Utah [1]	5
West Virginia	8
Wisconsin	11

MEASLES	Cases
Alabama	12
Arizona	8
Arkansas	8
California	66
Colorado	1
Connecticut	30
Delaware	11
Georgia	37
Idaho	1
Illinois	45
Indiana	13

[1] Week ended Friday. [2] Exclusive of Kansas City. [3] Exclusive of Tulsa. [4] New York City only.

MEASLES—continued

	Cases
Iowa [1]	8
Kansas	36
Louisiana	12
Maine	51
Maryland [1]	45
Massachusetts	311
Michigan	90
Minnesota	1
Missouri [2]	10
Montana	1
Nebraska	3
New Jersey	46
New Mexico	11
New York	173
North Carolina	611
Ohio	36
Oklahoma [3]	59
Oregon	17
Pennsylvania	444
South Carolina	159
South Dakota	10
Tennessee	103
Texas	8
Utah [1]	1
Washington	86
West Virginia	12
Wisconsin	60
Wyoming	8

MENINGOCOCCUS MENINGITIS

	Cases
Alabama	2
California	7
Colorado	2
Florida	1
Illinois	4
Massachusetts	3
Michigan	4
Minnesota	3
Mississippi	1
Missouri [2]	3
Montana	1
New Jersey	1
Ohio	1
Oklahoma [3]	1
Rhode Island	1
Utah [1]	3
Washington	2
West Virginia	1
Wisconsin	2

POLIOMYELITIS

	Cases
Arkansas	4
California	26
Colorado	2
Connecticut	6
Idaho	3
Illinois	17
Indiana	7
Iowa [1]	4
Kansas	2
Louisiana	1
Maine	3
Maryland [1]	2
Massachusetts	30
Michigan	11
Minnesota	6
Mississippi	1
Missouri [2]	5
Montana	2
Nebraska	4
New Jersey	3
New Mexico	3
New York	15
North Carolina	1
Ohio	27
Oklahoma [3]	2
Oregon	83
Pennsylvania	21
Rhode Island	3
South Carolina	3
South Dakota	5
Tennessee	8
Texas	6
Utah [1]	1
Vermont	2
Washington	11
West Virginia	18
Wisconsin	6

SCARLET FEVER

	Cases
Alabama	30
Arizona	16
Arkansas	17
California	169
Colorado	47
Connecticut	60
Delaware	1
Florida	7
Georgia	28
Idaho	15
Illinois	283
Indiana	114
Iowa [1]	37
Kansas	83
Louisiana	18
Maine	41
Maryland [1]	50
Massachusetts	247
Michigan	213
Minnesota	148
Mississippi	35
Missouri [2]	66
Montana	22
Nebraska	50
New Jersey	127
New Mexico	7
New York	309
North Carolina	140
Ohio	246
Oklahoma [3]	43
Oregon	22
Pennsylvania	389
Rhode Island	16
South Carolina	46
South Dakota	52
Tennessee	59

[1] Week ended Friday. [2] Exclusive of Kansas City. [3] Exclusive of Tulsa.

SCARLET FEVER—continued	Cases
Texas	66
Utah [1]	8
Vermont	1
Washington	32
West Virginia	56
Wisconsin	141
Wyoming	20

SMALLPOX	
Arkansas	3
California	8
Colorado	12
Florida	1
Idaho	14
Illinois	37
Indiana	41
Iowa [1]	19
Kansas	20
Louisiana	3
Michigan	7
Mississippi	11
Missouri [2]	75
Montana	6
Nebraska	11
New York	5
North Carolina	11
Ohio	9
Oklahoma [3]	40
Oregon	38
South Carolina	8
South Dakota	3
Tennessee	2
Texas	6
Utah [1]	45
Washington	11
West Virginia	6
Wisconsin	17
Wyoming	1

TYPHOID FEVER	Cases
Alabama	13
Arizona	2
Arkansas	10
California	15
Colorado	3
Connecticut	5
Delaware	1
Florida	2
Georgia	14
Illinois	28
Indiana	4
Iowa [1]	2
Kansas	6
Louisiana	9
Maine	1
Maryland [1]	21
Massachusetts	14
Michigan	14
Minnesota	3
Mississippi	5
Missouri [2]	13
Nebraska	5
New Jersey	8
New Mexico	8
New York	45
North Carolina	20
Ohio	20
Oklahoma [3]	28
Oregon	5
Pennsylvania	39
South Carolina	34
South Dakota	1
Tennessee	30
Texas	25
Utah [1]	1
Washington	4
West Virginia	20
Wyoming	2

[1] Week ended Friday. [2] Exclusive of Kansas City. [3] Exclusive of Tulsa.

Reports for Week Ended November 12, 1927

DIPHTHERIA	Cases
District of Columbia	12
North Dakota	3

MEASLES	
District of Columbia	2
North Dakota	2

POLIOMYELITIS	
North Dakota	1

SCARLET FEVER	Cases
District of Columbia	21
North Dakota	40

SMALLPOX	
North Dakota	6

TYPHOID FEVER	
District of Columbia	4

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
September, 1927										
District of Columbia	0	46			4		8	38	1	11
October, 1927										
District of Columbia	0	92	2		8		7	63	0	14
Maryland	2	142	39	8	69	1	10	133	0	770
Michigan	0	403	4	1	144		90	489	38	11
New Hampshire	0	17	59				18	44	0	8
New Jersey	4	566	23	2	64		45	272	0	39
North Dakota	5	41	3		27		3	159	12	9
South Carolina	0	591	1,557	3,943	595	396	12	143	14	233

September, 1927

	Cases
District of Columbia:	
Chicken pox	7
Lethargic encephalitis	1
Whooping cough	16

October, 1927

	Cases
Actinomycosis:	
North Dakota	1
Anthrax:	
New Jersey	1
Chicken pox:	
District of Columbia	22
Maryland	124
Michigan	197
New Jersey	319
North Dakota	76
South Carolina	34
Dengue:	
South Carolina	54
Dysentery:	
Maryland	28
New Jersey	7
German measles:	
Maryland	8
New Jersey	15
Hookworm disease:	
South Carolina	144
Impetigo contagiosa:	
Maryland	2
Lead poisoning:	
New Jersey	3
Leprosy:	
Michigan	1

October, 1927—Continued

	Cases
Lethargic encephalitis:	
Maryland	2
Michigan	2
Mumps:	
Maryland	22
Michigan	287
North Dakota	26
Ophthalmia neonatorum:	
Maryland	3
New Jersey	2
South Carolina	41
Paratyphoid fever:	
New Jersey	1
South Carolina	22
Rabies in animals:	
Maryland	7
South Carolina	4
Rabies in man:	
Michigan	1
Septic sore throat:	
Maryland	8
Michigan	9
Trichinosis:	
New Jersey	1
Vincent's angina:	
Maryland	5
Whooping cough:	
District of Columbia	23
Maryland	103
Michigan	442
New Jersey	378
North Dakota	6
South Carolina	248

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 99 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,770,000. The estimated population of the 94 cities reporting deaths is more than 30,180,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended November 5, 1927, and November 6, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
42 States	2,986	2,770	
99 cities	1,267	1,283	1,242
Measles:			
41 States	2,090	2,564	
99 cities	455	473	
Poliomyelitis:			
42 States	347	61	
Scarlet fever:			
42 States	3,235	3,322	
99 cities	879	1,088	853
Smallpox:			
42 States	495	246	
99 cities	109	14	22
Typhoid fever:			
42 States	639	911	
99 cities	114	140	89
Deaths reported			
Influenza and pneumonia:			
94 cities	574	636	
Smallpox:			
94 cities	0	0	

City reports for week ended November 5, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic period are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria: Cases, estimated expectancy	Diphtheria: Cases reported	Influenza: Cases reported	Influenza: Deaths reported	Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
NEW ENGLAND									
Maine:									
Portland	75,333	4	2	2	0	1	1	0	2
New Hampshire:									
Concord	22,546	0	0	0	0	0	1	0	2
Manchester	83,097	0	3	0	0	0	0	0	1
Vermont:									
Barre	10,008	0	0	0	0	0	0	0	0
Burlington	24,089	0	1	0	0	0	0	0	3
Massachusetts:									
Boston	779,620	40	47	16	6	1	92	8	7
Fall River	128,993	1	4	4	0	0	1	0	3
Springfield	142,065	2	3	2	0	0	2	2	1
Worcester	190,757	16	7	6	0	0	2	12	3
Rhode Island:									
Pawtucket	69,760	0	1	0	0	0	1	7	1
Providence	267,918	0	8	9	0	0	0	0	2
Connecticut:									
Bridgeport	(1)	0	9	4	0	0	0	0	0
Hartford	160,197	2	7	6	0	0	0	0	2
New Haven	178,927	9	3	0	0	0	4	3	4
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	48	18	17		0	6	15	7
New York	5,873,356	76	150	262	9	8	16	11	92
Rochester	316,786	1	11	6		0	1	0	5
Syracuse	182,003	5	11	2		0	17	14	3

[1] No estimate made.

City reports for week ended November 5, 1927—Continued

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
MIDDLE ATLANTIC—Con.									
New Jersey:									
Camden	128, 642	4	9	8	0	0	2	2	1
Newark	452, 513	13	11	30	10	0	4	24	6
Trenton	132, 020	0	3	0	0	1	1	0	2
Pennsylvania:									
Philadelphia	1, 979, 364	83	74	54	--------	5	8	43	33
Pittsburgh	631, 563	16	33	76	--------	3	96	14	25
Reading	112, 707	16	4	2	--------	0	0	0	2
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409, 333	5	17	14	0	4	1	0	17
Cleveland	936, 485	31	52	137	5	5	6	82	8
Columbus	279, 836	7	10	21	3	2	0	0	3
Toledo	287, 380	32	15	3	2	2	9	7	4
Indiana:									
Fort Wayne	97, 846	0	4	6	0	0	2	0	3
Indianapolis	358, 819	10	12	16	0	1	1	20	12
South Bend	80, 091	1	4	0	0	0	1	0	0
Terre Haute	71, 071	0	2	5	0	0	0	0	1
Illinois:									
Chicago	2, 995, 239	77	115	114	8	0	6	18	56
Springfield	63, 923	1	3	0	0	0	0	2	0
Michigan:									
Detroit	1, 245, 824	45	78	44	0	1	17	30	23
Flint	130, 316	9	12	14	0	0	0	36	6
Grand Rapids	153, 698	0	6	0	0	0	7	0	3
Wisconsin:									
Kenosha	50, 891	5	3	1	0	0	1	1	0
Milwaukee	509, 192	67	30	15	1	1	2	14	7
Racine	67, 707	2	2	2	0	0	0	0	0
Superior	39, 671	0	0	2	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110, 502	16	3	0	0	0	0	0	3
Minneapolis	425, 435	34	35	18	0	2	1	1	4
St. Paul	246, 001	10	19	7	0	2	1	10	8
Iowa:									
Davenport	52, 469	0	2	0	0	--------	0	0	--------
Des Moines	141, 441	2	8	1	0	--------	0	0	--------
Sioux City	76, 411	--------	3	--------	--------	--------	--------	--------	--------
Waterloo	36, 771	6	1	0	0	--------	0	2	--------
Missouri:									
Kansas City	367, 481	8	13	10	0	0	0	27	8
St. Joseph	78, 342	2	3	0	0	0	0	1	0
St. Louis	821, 543	19	51	53	0	0	5	3	--------
North Dakota:									
Fargo	26, 403	6	0	0	0	0	0	3	1
Grand Forks	14, 811	4	0	0	0	--------	0	0	--------
South Dakota:									
Aberdeen	15, 036	0	0	0	0	--------	0	0	--------
Sioux Falls	30, 127	0	1	0	0	--------	0	0	--------
Nebraska:									
Lincoln	60, 941	5	3	1	0	0	0	5	0
Omaha	211, 768	5	11	1	0	0	0	0	6
Kansas:									
Topeka	55, 411	11	3	4	1	1	0	0	0
Wichita	88, 367	3	7	5	0	0	0	0	0
SOUTH ATLANTIC									
Delaware:									
Wilmington	122, 049	0	4	5	0	0	0	0	4
Maryland:									
Baltimore	796, 296	27	34	22	10	2	17	2	26
Cumberland	33, 741	1	1	0	0	0	0	0	0
Frederick	12, 035	0	1	4	0	0	0	0	0
District of Columbia:									
Washington	497, 906	4	21	20	1	1	0	0	7
Virginia:									
Lynchburg	30, 395	1	3	5	0	0	0	0	0
Norfolk	(1)	8	5	1	0	0	0	6	1
Richmond	186, 403	1	24	13	0	1	4	1	8
Roanoke	58, 208	1	6	3	0	0	18	0	2
West Virginia:									
Charleston	49, 019	0	4	1	0	0	1	0	0
Wheeling	56, 208	10	4	0	0	0	0	1	3

[1] No estimate made.

City reports for week ended November 5, 1927—Continued

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria: Cases, estimated expectancy	Diphtheria: Cases reported	Influenza: Cases reported	Influenza: Deaths reported	Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
SOUTH ATLANTIC—Con.									
North Carolina:									
Raleigh	30,371	2	3	5	0	0	1	0	0
Wilmington	37,061	0	1	0	0	0	8	0	1
Winston-Salem	69,031	0	4	5	0	0	0	0	1
South Carolina:									
Charleston	73,125	0	2	1	32	0	4	1	3
Columbia	41,225	4	2	0	0		4	3	
Greenville	27,311	0	2	0	0	0	0	1	1
Georgia:									
Atlanta	[1]	2	11	9	28	0	1	2	4
Brunswick	16,809	0	0	0	0	0	0	5	1
Savannah	93,134	0	3	9	21	0	15	0	1
Florida:									
Miami	69,754	0		1	0	0	0	0	1
St. Petersburg	26,847		0			1			0
Tampa	94,743	0	2	2	2	0	0	0	1
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	2	3	0	0	0	0	0	3
Lexington	46,895	2		0	1	0	1	1	0
Louisville	305,935	1	11	1	1	0	3	0	4
Tennessee:									
Memphis	174,533	0	13	5	0	0	41	0	5
Nashville	136,220	8	7	2	0	1	0	1	3
Alabama:									
Birmingham	205,670	0	7	10	5	1	1	0	7
Mobile	65,955	0	2	4	0	1	1	0	0
Montgomery	46,481	0	3	8	2	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	2	2	7	0		0	0	
Little Rock	74,216	0	3	4	0	0	1	0	0
Louisiana:									
New Orleans	414,493	1	12	12	5	4	0	0	5
Shreveport	57,857	5	1	10	0	0	0	0	3
Oklahoma:									
Oklahoma City	[1]	0	5	14	6	0	1	0	1
Tulsa	124,478	2		1	0		0	2	
Texas:									
Dallas	194,450	5	15	25	0	1	0	0	1
Galveston	48,375	0	0	3	0	0	0	0	1
Houston	164,954	0	6	7	0	0	0	0	6
San Antonio	198,069	0	3	9	0	1	4	0	5
MOUNTAIN									
Montana:									
Billings	17,971	0	0	0	0	0	0	0	0
Great Falls	29,883	4	1	0	0	0	0	0	1
Helena	12,037	9	0	0	0	0	0	0	0
Missoula	12,668	17	0	0	0	0	0	0	0
Idaho:									
Boise	23,042	0	0	0	0	0	0	8	0
Colorado:									
Denver	280,911	33	17	2		1	0	7	9
Pueblo	43,787	3	4	0	0	0	0	0	0
New Mexico:									
Albuquerque	21,000	0	0	4	0	0	0	1	0
Utah:									
Salt Lake City	130,948	23	4	9	0	1	1	1	2
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	1
PACIFIC									
Washington:									
Seattle	[1]	20	8	3	0		15	3	
Spokane	108,897	21	4	2	0		0	0	
Tacoma	104,455		4						
Oregon:									
Portland	282,383	8	12	14	0	0	9	1	2
California:									
Los Angeles	[1]	24	48	31	8	2	2	9	21
Sacramento	72,260	4	2	1	0	0	0	1	2
San Francisco	557,530	45	18	15	4	0	12	7	4

[1] No estimate made.

City reports for week ended November 5, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	1	2	0	0	0	0	0	1	0	2	28
New Hampshire:											
Concord	0	0	0	0	0	0	0	0	0	0	7
Manchester	0	0	0	0	0	0	0	0	0	0	9
Vermont:											
Barre	0	0	0	0	0	0	0	0	0	0	8
Burlington	1	5	0	0	0	0	0	0	0	0	12
Massachusetts:											
Boston	37	44	0	0	0	11	3	0	0	43	193
Fall River	2	6	0	0	0	3	1	1	0	0	28
Springfield	5	2	0	0	0	2	0	0	0	0	31
Worcester	10	5	0	0	0	1	0	1	1	9	44
Rhode Island:											
Pawtucket	0	2	0	0	0	1	0	0	0	0	27
Providence	6	12	0	0	0	7	0	0	0	1	65
Connecticut:											
Bridgeport	6	6	0	0	0	1	0	2	0	0	17
Hartford	5	7	0	0	0	5	0	2	1	1	40
New Haven	5	0	0	0	0	2	1	0	0	3	39
MIDDLE ATLANTIC											
New York:											
Buffalo	16	24	0	0	0	6	1	3	0	10	120
New York	82	86	0	0	0	[1] 93	21	30	2	156	1,316
Rochester	6	9	0	0	0	3	1	2	0	2	76
Syracuse	8	6	0	0	0	1	0	1	0	5	37
New Jersey:											
Camden	4	0	0	0	0	3	0	0	0	1	34
Newark	11	10	0	0	0	4	2	3	0	47	100
Trenton	0	0	0	0	0	0	0	0	0	0	30
Pennsylvania:											
Philadelphia	58	55	0	0	0	24	7	1	0	19	456
Pittsburgh	37	30	0	0	0	8	1	1	1	6	181
Reading	1	1	0	0	0	1	0	0	0	0	23
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	13	5	0	1	0	13	1	1	0	3	147
Cleveland	24	27	0	0	0	12	2	0	0	16	193
Columbus	0	12	0	0	0	2	0	0	0	2	60
Toledo	11	15	0	1	0	5	1	0	0	10	59
Indiana:											
Fort Wayne	1	7	0	0	0	2	0	1	0	2	31
Indianapolis	9	32	2	4	0	4	0	1	1	2	92
South Bend	3	0	0	0	0	2	0	0	0	0	14
Terre Haute	3	1	0	0	0	0	0	1	1	0	22
Illinois:											
Chicago	85	85	0	3	0	55	6	4	0	67	626
Springfield	3	13	0	0	0	0	0	1	0	1	16
Michigan:											
Detroit	63	45	1	0	0	20	3	0	0	47	261
Flint	9	15	0	0	0	0	0	-------	0	1	35
Grand Rapids	9	5	0	0	0	0	0	0	0	0	34
Wisconsin:											
Kenosha	2	2	0	1	0	0	1	0	0	1	7
Milwaukee	20	7	2	0	0	14	1	1	1	7	118
Racine	5	2	0	0	0	0	0	0	0	2	-------
Superior	2	1	1	0	0	0	0	0	0	0	11
WEST NORTH CENTRAL											
Minnesota:											
Duluth	6	8	0	0	0	1	1	0	0	8	27
Minneapolis	42	21	1	0	0	3	1	0	0	1	80
St. Paul	18	4	1	0	0	1	0	1	1	3	48

[1] Pulmonary tuberculosis only.

City reports for week ended November 5, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
WEST NORTH CENTRAL—contd											
Iowa:											
Davenport	1	0	0	0			0	0		0	
Des Moines	9	14	0	11			0	0		0	
Sioux City	3		1				0				
Waterloo	2	3	0	0			0	0		1	
Missouri:											
Kansas City	11	7	0	0	0	5	1	0	1	1	111
St. Joseph	4	0	0	75	0	6	0	0	0	0	21
St. Louis	33	22	0	3	0	7	3	11	0	10	182
North Dakota:											
Fargo	2	2	0	0	0	0	1	0	0	1	6
Grand Forks	1	1	0	0			0	0		0	
South Dakota:											
Aberdeen	0	0	1	0			0	0		0	
Sioux Falls	2	5	0	0			0	0		0	5
Nebraska:											
Lincoln	1	2	0	0	0	0	0	0	0	7	12
Omaha	5	6	2	2	0	2	0	0	0	0	55
Kansas:											
Topeka	3	1	0	0	0	1	0	0	0	5	17
Wichita	4	6	0	0	0	0	0	0	0	0	33
SOUTH ATLANTIC											
Delaware:											
Wilmington	5	1	0	0	0	0	0	0	0	0	36
Maryland:											
Baltimore	13	9	0	0	0	16	5	5	0	22	228
Cumberland	1	1	0	0	0	0	0	0	0	0	14
Frederick	0	0	0	0	0	0	0	1	0	0	4
District of Columbia:											
Washington	15	24	0	1	0	6	2	2	1	4	123
Virginia:											
Lynchburg	1	5	0	0	0	0	0	5	0	4	13
Norfolk	2	5	0	0	0	1	0	0	0	1	
Richmond	9	9	0	0	0	2	0	0	0	0	
Roanoke	3	3	0	0	0	0	0	0	0	0	16
West Virginia:											
Charleston	2	3	0	0	0	1	0	0	2	0	24
Wheeling	3	0	0	0	0	1	0	0	0	0	17
North Carolina:											
Raleigh	2	1	0	0	0	0	0	0	0	1	9
Wilmington	1	1	0	0	0	1	0	0	0	0	10
Winston-Salem	2	6	0	0	0	2	0	0	0	3	24
South Carolina:											
Charleston	1	0	0	0	0	0	0	4	2	3	20
Columbia	1	0	0	0			0	0		0	10
Greenville	1	4	0	0	0	0	0	0	0	2	4
Georgia:											
Atlanta	6	9	0	0	0	5	1	0	1	0	76
Brunswick	0	0	0	0	0	2	0	0	0	0	3
Savannah	1	5	0	7	0	3	0	0	0	0	35
Florida:											
Miami		1		0	0	0		1	0	0	26
St. Petersburg	0		0		0	0	0		0		11
Tampa	0	2	0	0	0	3	0	0	0	0	29
EAST SOUTH CENTRAL											
Kentucky:											
Covington	2	2	0	0	0	0	0	0	0	0	17
Lexington		2		0	0	2		1	0	0	14
Louisville	4	4	0	0	0	2	2	2	0	1	[illegible]
Tennessee:											
Memphis	5	8	0	0	0	6	2	2	0	0	56
Nashville	4	2	0	0	0	4	3	2	0	1	42
Alabama:											
Birmingham	4	9	1	0	0	3	2	0	2	1	67
Mobile	1	1	0	0	0	0	0	0	0	0	18
Montgomery	1	7	0	0	0	0	0	1	0	10	

City reports for week ended November 5, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	1	0	0			0	0		0	
Little Rock	2	5	0	0	0	0	1	0	0	0	
Louisiana:											
New Orleans	5	5	0	0	0	16	3	8	0	1	135
Shreveport	1	2	0	0	0	1	0	0	0	0	32
Oklahoma:											
Oklahoma City	2	1	0	2	0	1	1	0	1	0	20
Tulsa		1		2				0		1	
Texas:											
Dallas	4	14	0	0	0	2	1	2	0	2	48
Galveston	1	0	0	0	0	0	0	0	0	0	14
Houston	1	6	0	0	0	5	0	3	0	0	62
San Antonio	0	3	0	1	0	3	0	1	0	1	50
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	0	0	0	0	0	5
Great Falls	1	1	0	1	0	1	0	0	0	0	7
Helena	0	2	0	0	0	0	0	0	0	0	2
Missoula	0	0	0	0	0	0	0	0	0	0	2
Idaho:											
Boise	1	2	1	0	0	0	0	0	0	0	6
Colorado:											
Denver	9	12	1	0	0	11	1	1	0	0	76
Pueblo	1	1	0	0	0	1	1	0	0	0	8
New Mexico:											
Albuquerque	0	0	0	0	0	4	0	0	0	0	6
Utah:											
Salt Lake City	2	2	0	3	0	3	1	3	0	2	27
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	4
PACIFIC											
Washington:											
Seattle	8	14	3	0			1	1		4	
Spokane	9	3	2	7			0	0		0	
Tacoma	3		2				0				
Oregon:											
Portland	9	6	3	7	0	4	1	0	0	0	68
California:											
Los Angeles	17	17	3	0	0	35	2	0	0	10	239
Sacramento	1	3	0	0	0	0	1	0	0	0	28
San Francisco	9	17	1	0	0	10	1	1	0	15	171

Division, State, and city	Meningococcus meningitis: Cases	Meningococcus meningitis: Deaths	Lethargic encephalitis: Cases	Lethargic encephalitis: Deaths	Pellagra: Cases	Pellagra: Deaths	Poliomyelitis (infantile paralysis): Cases, estimated expectancy	Poliomyelitis: Cases	Poliomyelitis: Deaths
NEW ENGLAND									
Maine:									
Portland	0	0	0	0	0	0	0	2	0
Massachusetts:									
Boston	0	1	0	0	0	0	1	11	2
Fall River	0	0	0	0	0	0	0	3	2
Springfield	0	0	0	0	0	0	0	1	0
Worcester	0	0	0	0	0	0	0	2	3
Rhode Island:									
Providence	0	0	0	0	0	0	0	3	0

City reports for week ended November 5, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
MIDDLE ATLANTIC									
New York:									
New York [1]	2	1	5	4	0	0	7	12	1
Rochester	0	0	0	0	0	0	0	0	1
New Jersey:									
Camden	0	0	0	0	0	0	0	1	0
Pennsylvania:									
Philadelphia	0	0	0	0	1	1	0	1	1
Pittsburgh	0	0	0	0	0	0	0	2	2
EAST NORTH CENTRAL									
Ohio:									
Cincinnati [1]	0	0	0	0	0	0	0	4	2
Cleveland	0	1	0	1	0	0	1	0	0
Indiana:									
Fort Wayne	0	0	0	0	0	0	0	2	2
Illinois:									
Chicago [2]	4	1	1	0	0	0	2	1	1
Michigan:									
Detroit	3	2	0	0	0	0	1	2	0
Grand Rapids	0	0	0	0	0	0	0	1	0
Wisconsin:									
Milwaukee	6	5	0	0	0	0	0	1	1
WEST NORTH CENTRAL									
Minnesota:									
St. Paul	0	0	0	0	0	0	1	1	0
Iowa:									
Waterloo	0	0	0	0	0	0	0	2	1
Kansas:									
Topeka	0	0	1	0	0	0	0	1	0
SOUTH ATLANTIC [1] [3]									
Delaware:									
Wilmington	0	0	0	0	0	0	0	1	0
Virginia									
Lynchburg	0	0	0	0	0	1	0	0	0
Richmond	0	0	0	0	0	0	0	0	1
West Virginia:									
Wheeling	0	0	0	0	0	0	0	1	0
North Carolina:									
Raleigh	0	0	0	0	0	1	0	0	0
Winston-Salem	0	0	0	0	2	1	0	0	0
South Carolina:									
Charleston [3]	0	0	0	0	0	0	0	1	0
Florida:									
Tampa	0	1	0	0	0	0	0	0	0
EAST SOUTH CENTRAL [1]									
Kentucky:									
Covington	0	0	0	0	0	0	0	1	0
Lexington	0	0	0	0	0	0	0	2	0
Tennessee:									
Memphis	0	0	0	0	1	0	0	0	0
Nashville	0	0	0	0	0	0	0	1	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	1	4	0	0	0
Louisiana:									
New Orleans	0	0	0	0	2	0	0	0	0
Shreveport	0	0	0	0	0	2	0	0	0
Texas:									
Dallas	0	0	0	0	0	0	0	2	0
Houston	0	0	0	0	0	0	0	1	0

[1] Typhus fever: 1 case at New York, N. Y., 1 case at Cincinnati, O., 11 cases at Savannah, Ga., and 1 case at Mobile, Ala.
[2] Rabies (human): 1 case and 1 death at Chicago, Ill.
[3] Dengue: 13 cases at Charleston, S. C., and 1 case at Savannah, Ga.

City reports for week ended November 5, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
MOUNTAIN									
Idaho:									
Boise	0	0	0	0	0	0	0	2	0
Colorado:									
Denver	1	1	0	0	0	0	0	0	1
Utah:									
Salt Lake City	0	1	0	0	0	0	0	2	0
PACIFIC									
Washington:									
Seattle	0		0		0		0	3	
Spokane	1		0		0		0	2	
Oregon:									
Portland	1	0	0	0	0	0	1	5	1
California:									
Los Angeles	3	2	0	0	0	0	1	8	1
Sacramento	1	1	0	0	0	0	0	1	0
San Francisco	0	0	0	0	0	0	1	1	0

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended November 5, 1927, compared with those for a like period ended November 6, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate pouulations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, October 2 to November 5, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927
101 cities	159	143	165	144	203	170	213	195	224	[2] 215
New England	66	132	85	128	85	123	106	135	118	114
Middle Atlantic	110	129	100	123	122	143	138	191	143	226
East North Central	188	158	218	138	260	199	241	232	275	261
West North Central	177	145	210	119	240	129	264	139	252	[3] 201
South Atlantic	214	170	216	203	300	194	354	192	317	185
East South Central	253	153	269	158	398	168	383	260	424	153
West South Central	176	197	219	256	279	268	331	298	253	323
Mountain	173	126	164	198	255	153	155	99	219	90
Pacific	198	99	174	154	190	220	204	152	287	[4] 144

[1] The figures given in this table are rates per 100,000 population annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926, and 1927, respectively.
[2] Sioux City, Iowa, and Tacoma, Wash., not included.
[3] Sioux City, Iowa, not included.
[4] Tacoma, Wash., not included.

Summary of weekly reports from cities, October 2 to November 5, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

MEASLES CASE RATES

	Week ended—									
	Oct. 9, 1926	Oct 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927
101 cities	31	40	43	50	49	55	64	70	81	[2] 77
New England	33	118	26	132	26	186	24	190	66	241
Middle Atlantic	11	56	9	53	12	64	13	72	16	72
East North Central	29	11	36	17	50	21	77	18	80	29
West North Central	26	12	44	14	42	22	85	34	151	[3] 14
South Atlantic	15	31	20	69	26	45	9	107	20	132
East South Central	5	56	0	127	21	51	21	204	26	234
West South Central	0	8	13	55	4	38	0	21	9	21
Mountain	109	27	237	18	337	72	392	63	793	9
Pacific	179	45	289	58	276	50	340	92	313	[4] 80

SCARLET FEVER CASE RATES

	Oct. 9, 1926	Oct 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927
101 cities	111	103	129	96	152	117	169	146	188	[2] 149
New England	144	139	144	130	193	151	245	211	264	200
Middle Atlantic	57	101	62	63	51	74	92	97	94	110
East North Central	120	102	132	108	155	128	157	166	186	173
West North Central	216	107	319	175	373	137	355	248	415	[3] 164
South Atlantic	99	123	125	91	162	161	132	168	197	159
East South Central	145	66	145	82	222	148	331	138	248	168
West South Central	69	67	86	88	95	80	112	126	112	151
Mountain	301	126	264	108	447	279	365	144	583	180
Pacific	158	76	204	97	233	136	236	97	204	[4] 149

SMALLPOX CASE RATES

	Oct. 9, 1926	Oct 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927
101 cities	3	5	4	6	3	7	3	7	3	[2] 18
New England	0	0	0	0	0	0	0	9	0	0
Middle Atlantic	0	0	0	0	0	0	0	0	0	0
East North Central	1	1	3	5	3	0	1	0	6	6
West North Central	2	14	6	26	0	42	2	52	2	[3] 164
South Atlantic	0	4	4	2	9	7	6	0	0	14
East South Central	10	0	0	0	10	5	5	5	10	0
West South Central	4	4	4	4	0	0	4	0	9	4
Mountain	9	54	9	72	0	72	9	45	0	36
Pacific	19	31	32	16	16	21	21	16	3	[4] 19

TYPHOID FEVER CASE RATES

	Oct. 9, 1926	Oct 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927
101 cities	33	25	32	19	26	20	27	17	24	[2] 19
New England	17	23	57	16	19	16	12	19	17	16
Middle Atlantic	27	21	26	16	20	15	14	12	12	20
East North Central	23	17	16	18	12	16	17	13	13	7
West North Central	22	28	14	22	22	22	24	16	26	[3] 25
South Atlantic	76	47	65	27	76	83	75	22	45	31
East South Central	145	20	140	81	98	81	140	46	108	36
West South Central	21	71	26	29	21	29	39	38	21	59
Mountain	64	54	46	63	27	81	46	27	91	36
Pacific	21	8	16	8	13	16	19	16	46	[4] 6

[2] Sioux City, Iowa, and Tacoma, Wash , not included.
[3] Sioux City, Iowa, not included.
[4] Tacoma, Wash., not included.

Summary of weekly reports from cities, October 2 to November 5, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

INFLUENZA DEATH RATES

	Week ended—									
	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927
95 cities	4	5	6	6	7	9	11	8	11	[4] 9
New England	0	5	5	2	7	5	7	0	12	5
Middle Atlantic	3	6	4	8	8	7	8	4	9	8
East North Central	2	1	2	3	5	5	14	5	6	9
West North Central	6	4	11	2	2	12	2	6	6	10
South Atlantic	6	4	8	7	8	11	21	18	15	7
East South Central	5	10	16	10	10	25	10	41	21	15
West South Central	13	9	13	13	13	13	26	17	40	26
Mountain	18	45	27	9	27	18	9	27	18	18
Pacific	0	8	11	3	0	14	7	10	7	[4] 7

PNEUMONIA DEATH RATES

95 cities	64	65	77	71	86	77	96	91	101	[4] 90
New England	33	81	75	95	83	86	90	65	99	63
Middle Atlantic	76	71	88	72	104	75	101	92	114	87
East North Central	54	58	62	49	61	66	86	82	85	98
West North Central	63	42	53	60	49	64	63	69	84	62
South Atlantic	61	57	89	108	113	72	108	88	121	118
East South Central	83	82	52	46	98	127	134	112	98	112
West South Central	88	69	106	69	53	86	88	190	115	90
Mountain	55	72	118	117	128	144	182	144	164	117
Pacific	53	69	81	83	99	100	88	97	49	[4] 100

[4] Tacoma, Wash., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

THE FAR EAST

Report for week ended October 29, 1927.—The following report for the week ended October 29, 1927, was transmitted by the eastern bureau of the health section of the secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Plague, cholera, or smallpox was reported present in the following ports:

PLAGUE

India.—Rangoon.

CHOLERA

India.—Calcutta, Tuticorin, Rangoon.

SMALLPOX

India.—Bombay, Rangoon, Tuticorin, Moulmein, Madras.

Dutch East Indies.—Banjermasin, Samarinda.

Sarawak.—Kuching.

Manchuria.—Mukden.

Kwantung.—Dairen.

Reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Aden Protectorate.—Perim, Kamaran, Aden.

Arabia.—Bahrein.

Persia.—Bender-Abbas, Mohammerah (last case of cholera August 31, 1927), Abadan (last case of cholera August 31, 1927), Bushire.

Ceylon.—Colombo (last case of plague October 22, 1927).

India.—Chittagong (last case of cholera August 13, 1927), Cochin, Vizagapatam, Bassein (last case of plague October 8, 1927; cholera, August 23, 1927), Negapatam (last case of cholera August 20, 1927), Karachi (last case of cholera June 4, 1927).

Portuguese India.—Nova Goa.

Siam.—Bangkok.

Federated Malay States.—Port Swettenham.

Straits Settlements.—Penang, Singapore (last case of plague August 30, 1927; cholera, October 15, 1927).

Dutch East Indies.—Batavia, Semarang (last case of plague January 8, 1927), Cheribon, Padang, Belawan-Deli, Tarakan, Menado, Sabang, Surabaya (last case of plague April 16, 1927), Makassar (last case of plague August 27, 1927), Balik-Papan.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

Portuguese Timor.—Dilly.

Philippine Islands.—Manila (last case of cholera September 3, 1927), Iloilo, Jolo, Cebu, Zamboanga.

French Indo-China.—Saigon and Cholon (last case of plague September 17, 1927; cholera, October 8, 1927), Tourane (last case of cholera October 1, 1927), Haiphong (last case of cholera August 20, 1927)

China.—Tsingtao, Chinwangtao (last case of cholera October 8, 1927), Tientsin (last case of cholera October 1, 1927), Newchang (last case of cholera September 24, 1927), Swatow (last case of cholera October 8, 1927), Amoy (last case of cholera October 15, 1927), Shanghai (last case of cholera October 22, 1927).

Hong Kong.

Macao.—Last case of cholera October 8, 1927.

Wei-hai-wei.

Formosa.—Keelung, Takao.

Chosen.—Chemulpo, Fusan.

Manchuria.—Yingkow (last case of cholera September 11, 1927), Antung, Harbin, Changchun.

Kwantung.—Port Arthur.

Japan.—Nagasaki, Yokohama, Niigata, Shimonoseki, Tsuruga, Kobe, Osaka, Ha-ko-date, Moji.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns.

New Guinea.—Port Moresby.

New Britain Mandated Territory.—Rabaul and Kokopo.

New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.

Western Samoa.—Apia.

New Caledonia.—Noumea.

Fiji.—Sava,

Hawaii.—Honolulu.

Society Islands.—Papeete.

AFRICA

Egypt.—Alexandria (last case of plague August 27, 1927), Port Said (last case of plague July 19, 1927). Suez (last case of plague September 3, 1927).

AFRICA—continued

Anglo-Egyptian Sudan.—Port Sudan, Suakin.
Eritrea.—Massaua.
French Somaliland.—Djibouti.
British Somaliland.—Berbera.
Italian Somaliland.—Mogadiscio.
Kenya.—Mombasa (last case of plague July 30, 1927).
Zanzibar.—Zanzibar.
Tanganyika.—Dar es Salaam.
Seychelles.—Victoria.
Mozambique.—Mozambique, Beira, Lourenco-Marques.

AFRICA—continued

Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.
Mauritius.—Port Louis (last case of plague September 16, 1927).
Reunion.—St. Denis (last case of plague January 22, 1927).
Madagascar.—Majunga, Diego-Suarez (last case of plague, January 31, 1927), Tamatave (last case of plague March 5, 1927).

AMERICA

Panama.—Colon, Panama.

Returns for the week ended October 29 were not received from the following ports:

Iraq.—Basra (last case of cholera October 22, 1927).
Dutch East Indies.—Pontianak, Palembang.
China.—Canton (last case of cholera October 22, 1927).
Union of Socialist Soviet Republics.—Vladivostok.

CANADA

Communicable diseases—Week ended November 5, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases from six Provinces of Canada for the week ended November 5, 1927, as follows:

Disease	Nova Scotia	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever			1				1
Influenza	9						9
Lethargic encephalitis			3				3
Poliomyelitis	1	1	2	1		5	10
Smallpox			38	14	12	2	66
Typhoid fever	3	18	12	2	3	2	40

Communicable diseases—Quebec—Week ended November 5, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended November 5, 1927, as follows:

Disease	Cases	Disease	Cases
Chicken pox	26	Scarlet fever	75
Diphtheria	75	Smallpox	2
German measles	1	Tuberculosis	33
Influenza	1	Typhoid fever	18
Measles	59	Whooping cough	10
Poliomyelitis	1		

Vital statistics—Quebec—August, 1927.—Births and deaths in the Province of Quebec for the month of August, 1927, were reported as follows:

Estimated population	2,604,000
Births	6,377
Birth rate per 1,000 population	29.39
Deaths	2,827
Death rate per 1,000 population	13.22
Deaths under 1 year	975
Infant mortality rate	152.89
Deaths from—	
Accidents (all)	103
Cancer	137
Cerebrospinal meningitis	5
Diabetes	19
Diarrhea	374
Deaths from—Continued.	
Diphtheria	32
Heart disease	239
Influenza	12
Measles	10
Pneumonia	123
Scarlet fever	11
Syphilis	5
Tuberculosis (pulmonary)	177
Tuberculosis (other forms)	49
Typhoid fever	32
Whooping cough	44

Typhoid fever—Montreal—January 2–November 12, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	June 18, 1927	86	18
Jan. 15, 1927	4	3	June 25, 1927	75	23
Jan. 22, 1927	1	2	July 2, 1927	66	21
Jan. 29, 1927	3	1	July 9, 1927	52	10
Feb. 5, 1927	1	0	July 16, 1927	39	4
Feb. 12, 1927	0	0	July 23, 1927	22	9
Feb. 19, 1927	1	2	July 30, 1927	23	10
Feb. 26, 1927	1	1	Aug. 6, 1927	16	5
Mar. 5, 1927	9	1	Aug. 13, 1927	20	5
Mar. 12, 1927	203	4	Aug. 20, 1927	14	4
Mar. 19, 1927	383	14	Aug. 27, 1927	8	3
Mar. 26, 1927	568	22	Sept. 3, 1927	27	0
Apr. 2, 1927	649	48	Sept. 10, 1927	17	0
Apr. 9, 1927	386	40	Sept. 17, 1927	13	2
Apr. 16, 1927	175	38	Sept. 24, 1927	6	3
Apr. 23, 1927	125	43	Oct. 1, 1927	18	1
Apr. 30, 1927	105	23	Oct. 8, 1927	14	1
May 7, 1927	106	19	Oct. 15, 1927	5	1
May 14, 1927	367	16	Oct. 22, 1927	3	1
May 21, 1927	770	26	Oct. 29, 1927	9	1
May 28, 1927	353	38	Nov. 5, 1927	1	1
June 4, 1927	239	37	Nov. 12, 1927	3	0
June 11, 1927	128	36			

EGYPT

Communicable diseases—Two weeks ended September 30, 1927.—During the two weeks ended September 30, 1927, communicable diseases were reported in Egypt as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Influenza	621		Typhoid fever	149	
Smallpox	1		Typhus fever	3	2

HAWAII

Plague-infected rat—Kapulena, island of Hawaii—October 22, 1927.—Under date of October 22, 1927, a plague-infected rat was reported found at Kapulena, island of Hawaii.

JAMAICA

Smallpox (alastrim)—September 25–October 29, 1927.—During the five-week period ended October 29, 1927, 10 cases of smallpox (alastrim) were reported in the island of Jamaica, exclusive of Kingston.

Other communicable diseases.—During the period under report other communicable diseases were reported as follows:

Disease	Cases		Disease	Cases	
	Kingston	Other localities		Kingston	Other localities
Chicken pox	2	9	Puerperal fever	1	2
Dysentery	4	9	Tuberculosis	25	43
Erysipelas		1	Typhoid fever	16	73

Population: Kingston, 62,707; Jamaica, general, 926,000.

MADAGASCAR

Plague—August 16–31, 1927.—During the 16-day period ended August 31, 1927, 56 cases of plague with 49 deaths were reported in the island of Madagascar. The occurrence was distributed by localities as follows: Province—Antisirabe, 12 cases, pneumonic; Itasy, 8 cases; Moramanga, 1 case, bubonic; Tananarive, 35 cases, including Tananarive Town, with 10 cases. The distribution according to type was: Bubonic, 22; pneumonic, 27; septicemic, 7 cases.

MEXICO

Increase in mortality, October, 1927—Epidemic malaria—Progreso, Yucatan, Mexico.—Information dated November 1, 1927, shows increased mortality at Progreso, Mexico, during the month of October, 1927, 58 deaths being reported for that period. Epidemic malarial fever was reported at Progreso, with 12 deaths. Two cases of blackwater fever and one case of pernicious malarial fever were reported during October.

TRINIDAD, BRITISH WEST INDIES

Health Week—October 1–8, 1927.—According to information dated November 11, 1927, the week ended October 8, 1927, was observed as Health Week in the island of Trinidad, British West Indies. It included an educational campaign for preventive and curative measures against disease, aided by the publication of articles in newspapers and in pamphlets, public-health exhibits, and lectures by Government medical officers and practicing physicians delivered in schools, colleges, and other places. The program included demonstrations by the department of agriculture and Government veterinary surgeons on sanitary dairy management; also demonstrations by the Child Welfare Society. Special attention was given to the subject of the prevention of tuberculosis. Statistics were quoted showing an average of 500 deaths from tuberculosis per annum in the colony, or about 1.5 per 1,000 of the population. The distribution of handbills to householders resulted in general clearing away of rubbish, the cutting down of undergrowth about houses, and the filling up of pools liable to breed malaria mosquitoes.

VENEZUELA

Gastroenteritis—Caracas—September, 1927.—During the month of September, 1927, 43 deaths from gastroenteritis were reported at Caracas, Venezuela. Of these, 29 deaths occurred in children under 2 years of age.

Mortality—Deaths from certain communicable diseases.—During the same period 266 deaths from all causes were reported at Caracas, including cerebrospinal meningitis 6, tuberculosis 38, and typhoid fever 1 death. Population, 135,253.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended November 25, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	Oct. 2-8	4		
Shanghai	Oct. 2-15		4	Report from foreign concession.
Tientsin	Sept. 18-Oct. 1	5		Reported by 1 mission hospital and British concession.
India				Sept. 18-24, 1927: Cases, 5,189; deaths, 2,526.
Calcutta	Sept. 24-Oct. 8	34	26	
Madras	Oct. 9-15		1	
Siam				Sept. 24-Oct. 1, 1927: Cases, 6; deaths, 4. Apr. 1-Oct. 1, 1927: Cases, 749; deaths, 511.
Bangkok	Sept. 24-Oct. 1	3	3	District.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	Oct. 11-20	2		
Ceylon:				
Colombo	Sept. 25-Oct. 1	2		
Hawaii Territory:				
Hawaii—				
Kapulena	Oct. 22			Plague rat found.
India				Sept 18-Oct. 24, 1927: Cases, 608; deaths, 319.
Madras Presidency	Sept. 18-24	123	49	
Java:				
Batavia	Oct. 2-8	33	33	Province.
Surabaya	Sept 18-24	7	7	East Java and Madura.
Madagascar				Aug 16-31, 1927. Cases, 56; deaths, 49. Bubonic: Cases, 22; pneumonic, 27; septicemic, 7. Deaths. Bubonic, 15; pneumonic, 27; septicemic, 7.
Province—				
Antisirabe	Aug 16-31	12	12	Pneumonic.
Itasy	do	8	6	Bubonic: Cases, 5; pneumonic, 1; septicemic, 2.
Moramanga	do	1	1	Bubonic.
Tananarive	do	35	30	Including Tananarive Town, with 10 cases, 7 deaths.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria:				
Oran	Oct. 23-29	5		
Angola:				
Loanda	Sept. 1-15	1		
Portuguese Congo	do	4		
British South Africa:				
Northern Rhodesia	Sept. 17-30	11	5	
Canada:				
Alberta	Oct 30-Nov. 5	2		
Manitoba	do	14		
Ontario	do	38		
Ottawa	Oct 30-Nov. 12	68		
Toronto	Oct 30-Nov 5	16		
Quebec	do	2		
Montreal	Nov 6-12	1		
Saskatchewan	Oct 30-Nov. 5	12		
China:				
Tientsin	Sept 18-Oct. 1	12		
Egypt	Sept. 18-30		1	
Great Britain:				
England and Wales	Oct. 23-29			Cases, 190.
Bradford	do	1		
Bristol	do	1		
Cardiff	do	1		
Leeds	do	1		
Newcastle-on-Tyne	do	2		

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended November 25, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
India				Sept. 18-24, 1927: Cases, 722; deaths, 173.
Bombay	Sept. 25-Oct. 1	4		
Calcutta	Sept. 25-Oct. 8	4	3	
Madras	Oct. 9-15	2		
Jamaica	Sept. 25-Oct. 29	10		Exclusive of Kingston.
Java:				
Batavia	Oct. 2-8	3		Province.
East Java and Madura	Sept. 17-30	19		
Siam				Apr. 1-Oct. 1, 1927: Cases, 250; deaths, 67.

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	Oct. 11-20	1		
China:				
Tientsin	Sept. 18-24	2		
Egypt				Sept. 24-30, 1927: Cases 8; deaths, 2.
Palestine				Oct. 1-10, 1927: Cases, 3.
Haifa	Oct. 1-10	2		
Tel Aviv	do	1		
Poland				Sept. 25-Oct. 1, 1927: Cases, 10; deaths, 3.
Portugal:				
Oporto	Oct. 23-29	1		
Union of South Africa:				
Cape Province	Sept 25-Oct. 1			Outbreaks.
Orange Free State	do			Do.

Reports Received from June 25 to November 18, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-Oct. 1	113	11	
Canton	May 1-Oct. 1	89	54	
Foochow	July 24-Sept. 10			Present.
Hong Kong	July 17-Sept. 3	3	3	
Kulangsu	June 21	1		
Shanghai	June 19-25	2		
Do	July 31-Oct. 1		114	In international settlement and French concession.
Swatow	May 15-Sept. 10	138	13	
Tienstsin	Aug. 27-Sept. 17	9		
India	Apr. 17-Sept. 17			Cases, 174,475; deaths, 95,407.
Bombay	May 8-Sept. 17	127	57	
Calcutta	May 8-Sept. 24	727	426	
Karachi	May 29-June 4	1	1	
Madras	June 19-Oct. 8	832	440	
Rangoon	May 8-Oct. 1	23	19	
India, French Settlements in	Mar. 30-Aug. 27	253	168	
Indo-China (French)	Apr. 1-Sept. 20			Cases, 15,564.
Annam	do	4,509		
Cambodia	do	408		
Cochin-China	do	1,606		
Saigon	June 4-Sept. 2	11	4	
Laos	July 11-Sept. 20	223		
Tonkin	Apr. 1-Sept. 20	9,818		
Iraq:				
Amarah	Oct. 2-8	10	3	
Baghdad	July 24-30	29	18	
Basra	July 17-Oct. 8	384	289	
Diwaniyah	Oct. 2-8	44	26	
Hillah	do	1		
Kerbala	do	11	7	
Kut	do	1		
Muntafiq	do	5	3	

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 18, 1927—Continued

CHOLERA—Continued

Place	Date	Cases	Deaths	Remarks
Japan:				
Yokohama	July 31-Aug. 6	1	1	
Persia:				
Abadan	July 24-Aug. 13	215	183	
Ahwaz	July 31-Aug. 13	20	13	
Minab	Aug. 7-13		23	
Mohammerah	July 17-Aug. 27	194	155	
Nasseri	July 19-31		10	
Philippine Islands:				
Bulacan Province	June 7-July 8	3	2	
Leyte Province—				
Barugo	June 29	1	1	
Carigara	June 23	1	1	Final diagnosis not received.
Palo	May 18	1		
Manila	July 17-Aug. 27	2		
Siam	May 1-Sept. 17			Cases, 356; deaths, 209.
Bangkok	do	48	15	
On vessel:				
S. S. Adrastus	Reported Aug. 6	1	1	At Yokohama, Japan.
S. S. Montreal Maru	Sept. 20			At Muko, Japan.
S. S. Tabaristan	Oct. 6	1		Case in coolie removed at Basra.
S. S. Morea	Sept. 2			At Hong Kong; cholera-infected.
S. S. War Mehtar (oil tanker).	Aug. 4	1	1	At Saffagha, Egypt.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	Aug. 21-31	1		
Oran	Aug. 21-Sept. 10	5	4	
Argentina	Jan. 1-Aug. 2			Cases, 80; deaths, 44.
Buenos Aires	Apr. 10-May 7	4	3	
Cordoba	Jan. 11-Aug. 6	52	29	
Corrientes	June 1	1	1	
Entre Rios	Mar. 29-Aug. 13	8	1	
Sante Fe	Apr. 28-May 16	4	3	
Territory—				
Chaco—				
Barranqueras	May 29	2	2	
Formosa	June 25	3	2	
Pampa	July 27-Aug. 2	4		
Rio Negro	Aug. 6	1		
City—				
Merou	Reported July 14			Present
Rosario	May 7	1	1	
Santa Fe	May 16	4	2	
Azores:				
St. Michaels Island	May 15-Oct. 1	9	1	
Ribeira Grande	June 12-18	1		
Brazil:				
Sao Paulo	June 3-9	1	1	
British East Africa:				
Kenya	Apr. 24-July 31	73	14	
Mombassa	July 24-30	1	1	
Nairobi	May 22-28	6		
Tanganyika	Mar. 29-May 28		37	
Do	July 24-Aug. 28		40	
Uganda	Jan. 1-Feb. 28	138	121	
Do	Mar. 27-June 18	469	300	
Canary Islands:				
Laguna district—				
Tejina	June 17	1		
Las Palmas	Oct. 8-11	8		
Ceylon:				
Colombo	May 1-Sept. 24	21	14	Plague rats, 4.
China:				
Amoy	July 3-23			Present in surrounding country.
Mongolia	Reported Oct. 11		200	Approximate.
Tientsin	Aug. 14-20	2		
Tungliao	Reported Oct. 15			Outbreak.
Ecuador:				
Guayaquil	June 1-Aug. 31	7		Rats taken, 72,410; found infected, 45.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 18, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Egypt:				
Alexandria	June 4-Sept. 2	4		
Beni-Souef	June 4-July 13	5	2	
Biba	June 4-10	1		At Nama.
Dakhalia	June 24-July 9	6	1	
Minia	Aug. 8-9	4		
Port Said	June 24-July 21	4	1	
Suez	Sept. 4	1		
Tanta district	June 4-10	1		
Greece	May 1-June 30	4	3	
Athens	June 1-Aug. 29	3		Including Piraeus.
Mytilene	Aug. 9-Sept. 26	6		
Patras	May 30-Oct. 1	9	2	
Hawaii Territory:				
Hamakua	July 15-Aug. 30			2 plague rodents.
Honokaa	May 17-23	2	2	
Kukuihaele	Aug. 12-17	1	1	Do.
Paauilo	July 26-Aug. 1		4	
India	Apr. 17-Sept. 10			Cases, 24,795; deaths, 10,845.
Bombay	May 8-Sept. 24	102	86	
Calcutta	Aug. 21-Sept. 3	18	10	
Madras	May 1-Sept. 17	1,324	611	
Rangoon	May 8-Oct. 1	73	67	
Indo-China (French)	Apr. 1-Aug. 10	50		
Saigon	Sept. 2-16	2		
Kwang-Chow-Wan	May 21-July 31	73		
Iraq:				
Baghdad	Apr. 8-May 28	12	1	
Java:				
Batavia	May 1-Sept. 24	313	294	Province.
East Java and Madura	May 22-July 16	28	27	
Pasoeroean Residency	May 9			Outbreak reported at Nagdiwano.
Surabaya	Apr. 17-Sept. 10	85	83	
Madagascar				Mar. 16-Apr. 30, 1927: Cases, 256; deaths, 135.
Province—				
Ambositra	Mar. 16-Aug. 15	100	93	
Antisirabe	do	30	30	
Miarinarivo (Itasy)	do	72	64	
Moramanga	May 16-Aug. 15	31	30	
Tananarive	Mar. 16-Aug. 15	246	217	
Tananarive Town	Mar. 16-June 30	22	20	
Mauritius:				
Port Louis	May 1-June 30	1	1	
Nigeria	Mar. 1-May 31	228	117	
Peru	Apr.-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	Apr. 1-July 31	13	8	
Lima City	Apr. 1-30	5	1	
Senegal	May 23-Oct. 16			Cases, 1,159; deaths, 646.
Baol	June 2-Oct. 16	235	109	
Cayor Frontier	July 4-Oct. 16	982	556	
Dakar	June 20-Oct. 2	147	94	
Facel	July 6	17	8	
Guindel	June 20-26	11	2	
Louga district	Sept. 18-Oct. 16	13	4	
M'Bour	July 6-10	28	23	
Medina	June 13-19	2	2	
Pout	July 4-10	1		
Rufisque	May 23-Sept. 25	228	167	
Thies district	do	34	15	
Tivaouane	June 2-July 17	50	32	
Siam	Apr. 1-June 25			Cases, 10; deaths, 7.
Bangkok	May 8-June 11	2	1	
Syria:				
Beirut	June 11-Sept. 10	4		
Tunisia	Apr. 21-July 10	144		
Tunis	July 25-Aug. 1	1		
Turkey:				
Constantinople	May 13-19	1		
Do	Sept. 18-24	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 18, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Union of South Africa:				
Cape Province—				
Maraisburg district	May 1-14	2	2	Native.
Orange Free State—				
Edenburg district	July 17-26	3	3	Natives; on farm.
Rouxville district	July 21-Aug. 6	2	2	
On vessel:				
S. S. Averoff	June 24-30	1		Greek warship at port of Athens.
S. S. Capafric	Aug. 23	3	1	At Duala, French Cameroons, from Nigeria.
S. S. Elcano	Aug. 19	1		At Piraeus, Greece.
S. S. Madonna	Aug. 24	1		At Dakar, Senegal, from ports south.
S. S. Ransholm	Aug. 5	3		At Gefle, Sweden, from Rufisque, Senegal.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-Sept. 20			Cases, 955.
Algiers	May 11-June 30	8		
Oran	May 21-Oct. 10	69		
Angola	June 1-July 31	45		
Arabia:				
Aden	July 17-Aug. 1	2	1	
Brazil:				
Bahia	Aug. 7-13	1		
Porto Alegre	July 1-Sept. 30	11		
Rio de Janeiro	May 22-Sept. 17	23	19	
British East Africa:				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 20-June 18		22	
Do	Aug. 7-28		21	
Zanzibar	Apr. 1-Aug. 31	121	41	
British South Africa:				
Northern Rhodesia	Apr. 30-Sept. 9	179	3	
Canada	June 5-Oct. 29			Cases, 783.
Alberta	June 12-Oct. 29			Cases, 239.
Edmonton	Oct. 23-29	1		
Calgary	June 12-Aug. 27	9		
British Columbia—				
Vancouver	May 23-Sept. 4	4		
Manitoba	June 5-Oct. 29			Cases, 48.
Winnipeg	June 12-Oct. 22	23		
Nova Scotia	Sept. 11-Oct. 15	2		
Halifax	Oct. 8-15	1		
Ontario	June 5-Oct. 29			Cases, 375.
Ottawa	June 12-Oct. 29	252		
Sarnia	Aug. 7-13	1		
Toronto	June 19-Oct. 29	23		
Windsor	Oct. 2-15	9		
Quebec	June 19-Oct. 29	30		
Riviere du Loup	Oct. 30-Nov. 5	3		
Saskatchewan	June 12-Oct. 29			Cases, 156.
Moose Jaw	Aug. 14-Oct. 22	24		
Regina	July 17-Oct. 8	15		
Ceylon	May 1-7			Cases, 3; deaths, 1.
Colombo	July 31-Aug. 6	1	1	
China:				
Amoy	May 8-28	1		
Do	July 3-16			Present in surrounding country.
Antung	July 4-31	3		
Canton	Sept. 18-24	1	1	
Chefoo	May 8-14			Present.
Foochow	May 8-Sept. 10			Do.
Hong Kong	May 8-Sept. 17	22	21	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, ABD YELLOW FEVER—Continued

Reports Received from June 25 to November 18, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
China—Continued.				
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-July 30	8		
Dairen	May 2-July 3	10	5	
Fushun	May 15-Sept. 17	11		
Harbin	June 13-July 10	4		
Kaiyuan	July 3-9	2		
Mukden	May 22-Oct 1	7		
Pensihu	July 3-Oct. 1	2		
Ssupingkai	May 8-July 9	3		
Tientsin	May 8-Sept 10	18	4	
Chosen	Feb. 1-July 30			Cases, 526; deaths, 211.
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr. 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr. 1-30	1		
Curacao	May 29-June 4	1		Alastrim.
Ecuador:				
Guayaquil	June 1-Aug. 31	4		
Egypt	May 7-July 29			Cases, 21; deaths, 3.
Alexandria	May 21-June 17	4	1	
Cairo	Jan. 22-Apr 15	14	3	
France	Apr. 1-Aug. 31			Cases, 207.
Lille	July 24-30	1		
Paris	May 21-July 31	14	2	
Gold Coast	Mar. 1-July 31	42	7	
Great Britain:				
England and Wales	May 22-Oct. 22			Cases, 3,800.
Birmingham	Aug 14-Sept. 30	2		
Bradford	May 29-June 11	2		
Bristol	Oct 16-22	6		
Cardiff	June 19-July 2	4		
Leeds	July 17-Oct. 22	23		
Liverpool	July 17-30	1		
London	May 15-June 18	2		
Manchester	Oct 2-15	3		
Newcastle-upon-Tyne	June 12-Oct. 15	11		
Sheffield	June 12-Oct. 22	33		
Stoke-on-Trent	Aug. 21-27	1		
Scotland—				
Dundee	May 29-Sept. 3	6		
Greece	June 1-30	14		
Saloniki	July 12-Aug. 15		2	
Guatemala:				
Guatemala City	June 1-30		9	
Guinea (French)	June 4-10	9		
India	Apr 17-Sept. 10			Cases, 77,163; deaths, 20,336.
Bombay	May 28-Sept. 24	244	158	
Calcutta	May 8-Sept. 24	412	315	
Karachi	May 15-Aug. 6	10	5	
Madras	May 22-Oct. 8	35	8	
Rangoon	May 8-Oct. 1	194	158	
India, French Settlements in	Mar. 20-Aug. 27	174	155	
Indo-China (French)	Mar. 21-Sept. 20			Cases, 332.
Saigon	May 14-Sept. 9	4	1	
Iraq:				
Baghdad	Apr. 10-Oct. 1	8	4	
Basra	Apr. 10-Sept. 17	9	8	
Italy	Apr. 10-May 21	18		
Rome	June 13-July 17	3		Including consular district.
Jamaica	May 29-Sept. 24	37		Reported as alastrim.
Japan	Apr. 3-May 7			Cases, 19.
Nagasaki City	June 20-Aug. 14	26	7	
Taiwan Island	May 21-31	1		
Java:				
Batavia	May 22-Aug. 20	7		
East Java and Madura	Apr. 24-Sept. 3	23	1	
Latvia	Apr. 1-30	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 18, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Mexico	Mar. 1-June 30			Deaths, 621.
Acapulco	Aug. 28-Sept. 17	2	2	
Durango	June 1-30		1	
Monterey	July 1-31	6	4	
San Luis Potosi	May 29-Aug. 13		11	
Tampico	June 1-July 31	1	2	
Torréon	Aug. 7-Oct. 1		2	
Morocco	Apr. 1-Aug. 31	283		
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in 2 localities.
Pasir Residency	Apr. 30-May 6			Epidemic outbreak.
Samarinda Residency	May 21-27			Do.
Nigeria	Mar. 1-July 31	2,844	658	
Paraguay:				
Asuncion	July 10-23		2	
Persia:				
Teheran	Feb. 21-July 23		16	
Poland	Apr. 10-Aug. 6	20	2	
Portugal:				
Lisbon	May 29-Oct. 8	26	1	
Oporto	Sept. 3-9	1		
Senegal:				
Medina	July 4-10	7		
Siam	Apr. 1-Sept. 3			Cases, 246; deaths, 66.
Bangkok	May 1-Sept. 10	16	8	
Spain:				
Madrid	Aug. 1-31		1	
Valencia	May 29-June 4	3		
Do	Sept. 25-Oct. 1	1		
Straits Settlements	June 12-18			Cases, 3.
Singapore	Apr. 1-June 18	7	2	
Sumatra:				
Medan	June 5-Aug. 20	3		
Switzerland:				
Berne	June 26-July 2	1		
Syria:				
Damascus	Aug. 11-Sept. 30	8		
Tunisia	Apr. 1-June 10			Cases, 10.
Tunis	June 1-10	1		
Union of South Africa:				
Cape Province	July 7-Aug. 20			Outbreaks.
Elliott district	May 11-June 10			Do.
Idutywa district	July 3-9			Do.
Kalanga district	May 11-June 10			Do.
Mount Ayliffe district	July 31-Aug. 6			Do.
Orange Free State	Aug. 7-13			Do.
Transvaal—				
Barberton district	May 1-7			Do.
Venezuela:				
Maracaibo	July 12-Oct. 3		4	

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-July 20			Cases, 399; deaths, 39.
Algiers	May 11-Oct. 10	33		
Oran	May 21-Aug. 31	34		
Argentina:				
Rosario	Aug. 1-31		1	
Bulgaria	Mar. 1-Aug. 10			Cases, 245; deaths, 21.
Sofia	June 4-Oct. 21	19		
Chile:				
Antofagasta	Apr. 16-May 31	1		
Do	Sept. 25-Oct. 1		1	
Concepcion	May 29-June 4		1	
La Calera	Apr. 16-May 31	1		
Ligua	Mar. 16-31	2		
Puerto Montt	Apr. 16-May 31	1		
Santiago	do	5	1	
Talcahuano	July 10-16		1	
Valparaiso	Apr. 16-Sept. 3	5	3	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 18, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
China:				
Manchuria—				
Harbin	July 25-Aug. 21	5		
Mukden	May 29-June 4	1		
Tientsin	July 10-16	1		
Chosen	Feb. 1-July 31			Cases, 793; deaths, 68.
Chemulpo	May 1-Aug. 31	3		
Gensan	do	4		
Seoul	Apr. 1-Aug. 31	35	3	
Czechoslovakia	do			Cases, 55.
Egypt	May 24-Sept. 16			Cases, 130; deaths, 20.
Alexandria	May 21-Aug. 5	13	5	
Cairo	Jan 15-July 1	43	16	
Port Said	Sept. 24-30	1		
Estonia	Apr. 1-June 30			Cases, 5.
Greece	June 1-30	2		
Athens	June 1-July 31		9	
Guatemala:				
Guatemala	Aug. 25-31		1	
Iraq:				
Baghdad	Apr. 24-30	1		
Irish Free State:				
Cork County	July 3-9	1		In urban district.
Donegal County—				
Letterkenney	Oct. 16-22	4		
Latvia	Apr. 1-July 31	32		
Lithuania	Feb. 1-Aug. 31	365	56	
Mexico	Feb 2-June 30			Deaths, 166.
Mexico City	May 29-Oct 22	79		Including municipalities in Federal district.
San Luis Potosi	July 31-Aug 6		1	
Morocco	Apr. 1-Sept 20	981		
Palestine	May 24-Sept. 26			Cases, 29
Haifa	May 24-Aug 29	8		
Jaffa	Aug. 2-Oct. 3	3		
Jerusalem	June 28-Aug. 15	3		
Mahnaim	May 17-23	1		In Safad district.
Nazareth	July 19-25	1		
Safad	May 17-Aug. 8	10		
Peru:				
Arequipa	Apr. 1-30		1	
Do	Aug. 1-31		2	
Poland	Apr. 10-Sept. 24	1,123	102	
Portugal:				
Lisbon	May 29-June 4	1		
Oporto	Aug. 20-27	1		
Rumania	Apr. 3-Aug. 27	1,000	69	
Spain:				
Seville	Aug. 19-25		2	
Syria:				
Aleppo	Sept. 11-17	2		
Tunisia	Apr. 22-July 20			Cases, 158.
Tunis	July 5-Aug. 21	2		
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa	Apr 1-30			Cases, 55; deaths, 8, native. In Europeans, cases, 2.
Cape Province	Apr. 1-Aug. 27	42	5	
Albany district	June 5-11			Outbreaks.
East London	May 22-28	1		Do.
Glen Gray district	May 1-7			Do.
Kentani district	June 26-July 2			Do.
Port Elizabeth	Aug. 7-13	1		
Qumbu district	May 1-7			Do.
Umzimkulu district	June 26-July 2			Do.
Natal	Apr. 1-Aug. 6	7	3	
Impendhle district	June 5-11			Do.
Orange Free State	Apr 1-July 23	5		
Transvaal	Apr. 1-30	1		
Johannesburg	July 3-Aug. 20	19	5	
Yugoslavia	May 1-Aug. 31			Cases, 24; deaths, 5.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 18, 1927—Continued

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Ashanti:				
Obuasi	Aug. 6	1	1	
Dahomey (West Africa):				
Porto Novo	July 1	1	1	In Syrian woman.
Gold Coast	Apr 1-June 30	60	22	
Do	Aug 4	2		
Ivory Coast	July 29	1	1	
Liberia:				
Monrovia	May 29-Sept 10	5	5	
Senegal	Oct. 3-16			Cases, 24; deaths, 18.
Dakar	July 9	1		
Do	Aug. 8		2	
Do	Sept 17			Present.
Do	Oct 3-16	12	7	
ul	Sept 26-Oct. 2	1	1	
nd of Go	Aug 22-Sept. 4	2	2	
bemer	Oct 9 16	1	1	
le	do	2	1	
ombole	Aug 1-Oct. 9	6	3	
Louga	Sept. 26-Oct 2	1	1	
M'Bour	May 27-June 19	5	5	
Ouakam	June 2-Aug 14	4	2	
Pout	Sept. 19-25	1	1	
Rufisque	Oct. 9-16	1	1	
St Louis	Aug. 1-Oct. 2	3	3	
Thies	July 10	1	1	In European.
Do	Sept 12-Oct 16	10	10	
Tiaroye	Aug 22-Sept. 4	1	1	
Tivaouane	May 27-Sept. 11	6	5	
Togoland:				
Melatza	Aug. 15-21	1	1	
On vessel.				
S. S. Desirade	Sept. 16	1	1	At Leixoes, Portugal, in passenger from Dakar, Senegal.

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TREASURY DEPARTMENT

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ISSUED WEEKLY

BY THE UNITED STATES PUBLIC HEALTH SERVICE

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DECEMBER 2 - 1927

SPECIAL ARTICLES

Poliomyelitis and Smallpox in the United States

Life Expectancy in the United States and in England

Seasonal Incidence of Tularaemia and Sources of Infection

UNITED STATES
GOVERNMENT PRINTING OFFICE
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UNITED STATES PUBLIC HEALTH SERVICE

HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

ASST. SURG. GEN. R. C. WILLIAMS, *Chief of Division*

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They contain: (1) Current information of the prevalence and geographic distribution of preventable diseases in the United States in so far as data are obtainable, and of cholera, plague, smallpox, typhus fever, yellow fever, and other communicable diseases throughout the world. (2) Articles relating to the cause, prevention, or control of disease. (3) Other pertinent information regarding sanitation and the conservation of the public health.

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CONTENTS

PUBLIC HEALTH REPORTS

VOL. 42 DECEMBER 2, 1927 NO. 48

PREVALENCE OF POLIOMYELITIS IN THE UNITED STATES

During the week ended November 19, 1927, there was a continuation of the decline in number of cases of poliomyelitis which has been recorded in the United States since the middle of September, but the disease is still more prevalent than it was at this season of the year in 1925 or 1926. A comparison of the reports for the four weeks October 23 to November 19, 1927, with the reports for the corresponding period of 1925 and 1926 will be found on page 2952 of this issue of the Public Health Reports.

PREVALENCE OF SMALLPOX IN THE UNITED STATES

Since last September smallpox has been somewhat more prevalent in some parts of the United States than it was during the corresponding period of the last two years. A table giving a comparison of the number of cases of smallpox reported by State health officers during the first three weeks of November of the years 1925, 1926, and 1927, appears in this issue of the Public Health Reports at page 2953. Reports for the week ended November 26, 1927, will be found on page 2977.

EXPECTATION OF LIFE IN ENGLAND AND IN THE UNITED STATES[1]

By ROLLO H. BRITTEN, *Associate Statistician, United States Public Health Service*

Life tables for England, based on the 1921 census and the deaths occurring in 1920, 1921, and 1922, and recently published by the Government actuary, Sir Alfred W. Watson, afford an interesting comparison with those of this country. In these years the expectation of life at birth was identical for males in England and in the United States. For females, the expectation at birth was nearly two years greater in England.

In the first table are given the expectations of life at birth, at 10 years, 20 years, etc., in England for males and females, for three periods the median years of which were 1906, 1911, and 1921.

[1] From the Office of Statistical Investigations, United States Public Health Service.

TABLE 1.—*Expectation of life at various ages in England for three periods*

Age	1906	1911	1921	Age	1906	1911	1921
	MALES				FEMALES		
At birth	48.53	51.50	55.62	At birth	52.38	55.35	59.58
10	51.81	53.08	54.64	10	54.53	55.91	57.53
20	43.01	44.21	45.78	20	45.77	47.10	48.73
30	34.76	35.81	37.40	30	37.36	38.64	40.26
40	26.96	27.74	29.19	40	29.37	30.30	31.86
50	19.76	20.29	21.36	50	21.81	22.51	23.69
60	13.49	13.78	14.36	60	15.01	15.48	16.22
70	8.30	8.53	8.75	70	9.25	9.58	9.96
80	4.86	4.90	4.93	80	5.36	5.49	5.56
90	2.56	2.87	2.82	90	2.94	3.16	3.13

The data show an increase of about 14 per cent in expectation at birth for either sex during the 15 years. As has been noted in this country, the improvement in the figures for later life is not nearly so great.

In the United States the life tables published by the Bureau of the Census are for 1919 and 1920 [2] and are therefore not directly comparable with those of England. In fact, it is felt that the data for these years are affected to a certain extent by the influenza epidemic. For the present comparison, therefore, we are instead taking the average of the expectations for 1920, 1921, and 1922, as calculated by the Metropolitan Life Insurance Co., and published in its Statistical Bulletin from time to time. The Metropolitan Life Insurance expectation is about one year greater than that for the census data, and this is true although the latter is for white alone[3] and the former for all persons in the registration States. The data are given in the following table:

TABLE 2.—*Expectation of life at various ages in the registration States, 1920, 1921, 1922* [a]

Age	Male	Female
0	55.58	57.73
7	56.47	57.33
12	52.11	52.89
17	47.79	48.53
22	43.74	44.48
32	35.77	36.70
42	27.94	28.89
52	20.42	21.27
62	13.73	14.38
72	8.42	8.88
82	4.79	5.04
92	2.73	2.82
102	1.63	1.84

[a] Taken from Statistical Bulletins of Metropolitan Life Insurance Co. Expectations for years 1920, 1921, and 1922 are averaged together.

[2] A discussion of these life tables (Some Tendencies Indicated by the New Life Tables, by Rollo H. Britten) was published in the Public Health Reports of Apr. 11, 1924. (Reprint No. 912.)

[3] For 1919-20 the Bureau of the Census gives separate tables for white and colored, but no tables for the two combined. It is to the tables for white persons that the statement in the text applies.

The expectation at birth is 55.58 for males (55.62 in England for the same years) and 57.73 for females (59.58 in England).

It has not been possible to follow the same age classification as that in the English data, but this fact will cause little inconvenience so far as the graphical comparison (fig. 1) is concerned. In this figure it has been necessary to omit the first few years of life, because the data as given are not complete enough to indicate the shape of the curve. It is well known that the curve rises rapidly after birth and does not start to decline until two or three years have passed. This omission is not material to the present discussion.

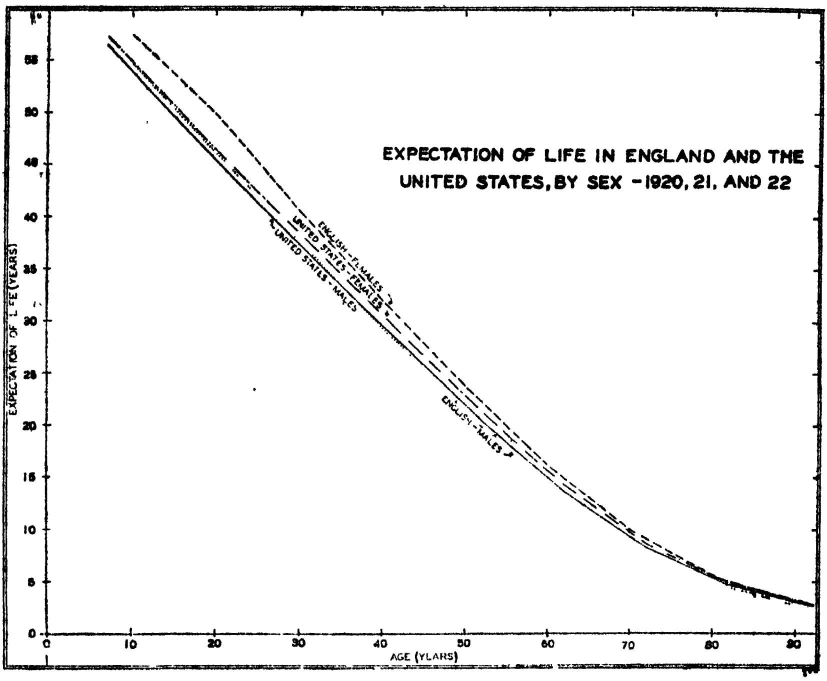


FIG. 1

The favorable position of English as compared with American females is evident from the graph. It is not until about the 25th year that the curve for the American female stands out markedly in comparison with that for the male, although the female expectation is greater at each age. In England there is a difference of several years from early life on. Comparing English and American males, we find that the English have the greater expectation up to about 35 years (except at birth, where they are the same), and that after 35 years the American expectation becomes and continues somewhat greater.

Some comparison with the earlier English figures given in Table 1 seems desirable. It will be confined to expectation at birth. Again,

the difficulty arises that the material is not for identical years. To match the English data for which 1906 is the median year, we have taken the average of the expectations for two periods covered by the data of the United States Bureau of the Census, viz, 1900–1902 and 1909–1911. To match the English data for which 1910 is the median year, it has been necessary to use the expectation for the period 1909–1911. Table 3 has been prepared on this basis.

TABLE 3.—*Expectation at birth in the United States and England, by sex, for three periods*

Year	Male		Female	
	United States	England	United States	England
1906 [1]	48.87	48.53	51.97	52.38
1911 [2]	49.86	51.50	53.24	55.35
1921 [3]	55.58	55.62	57.73	59.58

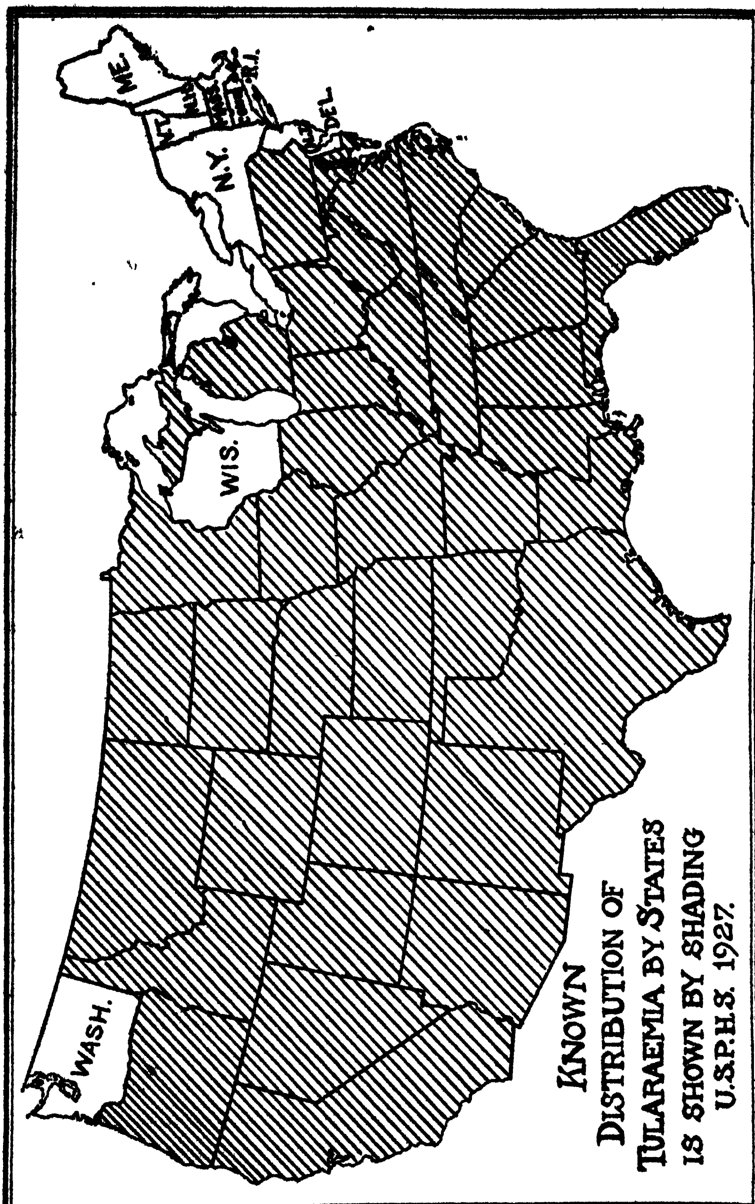
[1] The data for the United States are the average of expectations calculated by the Bureau of the Census for two periods, 1900-1902 and 1909-1911.
[2] The expectation for the United States is that calculated by the Bureau of the Census for 1909-1911.
[3] From Table 2 above

It will be noted that the English and American males have kept closely together with respect to expectation at birth, part of the difference in 1911 being due to the discrepancy in the years. For females, on the other hand, the English figures indicate a greater gain than the American figures.

SEASONAL INCIDENCE OF TULARAEMIA AND SOURCES OF INFECTION

Seasonal incidence of cases of tularaemia is due to the seasonal variation of three sources of infection—tick bite, fly bite, and the dressing of wild rabbits—but, owing to the overlapping of these influences, cases have occurred in the United States in every month of the year. The great reservoir of infection, and the greatest source of human infection, is the wild rabbits—jack, cottontail, and snowshoe varieties—but, owing to the agency of blood-sucking insects common to rabbits and man, we also find cases resulting from tick bite and fly bite.

(1) *Dressing of wild rabbits.*—November, December, and January have been the months of onset for 165 cases occurring east of the Mississippi River resulting from the dressing of wild cottontail rabbits for food. These months embrace the "open season" when, owing to the relaxation of the game laws, the hunting of cottontail rabbits is generally permitted and, consequently, these rabbits are then offered for sale in great numbers in the markets.



KNOWN DISTRIBUTION OF TULARAEMIA BY STATES IS SHOWN BY SHADING U.S.P.H.S. 1927.

Jack rabbits are found almost exclusively west of the Mississippi River; and since they are a pest to farmers, they are unprotected by the game laws and their destruction is often rewarded by a bounty. April to October have been the months of onset for most cases west of the Mississippi River, owing to the activities of skinning and cutting up wild jack rabbits for fish bait, coyote bait, chicken feed, dog feed, fox feed, and for the table.

(2) *Tick bite.*—March to August are the months recorded for the onset of cases of tularaemia due to tick bite. These months correspond with the season of greatest activity of the tick *Dermacentor andersoni*, which has caused 27 cases in Montana and in the surrounding States. These months also mark the time of onset of 17 cases which have occurred in Arkansas, Texas, Oklahoma, Louisiana, and Tennessee resulting from the bite of a tick (species undetermined).

(3) *Fly bite.*—June to September are the months recorded for the onset of 23 cases resulting from fly bite and are the months of greatest activity of the horsefly, *Chrysops discalis*, which occurs principally in Utah and in the surrounding States.

Market infections.—Of the rabbits offered for sale in the Washington, D. C., market in the winters of 1923, 1924, and 1925, Francis [1] examined the livers of 1,000 and found 9, or slightly less than 1 per cent, infected with virulent *Bacterium tularense.* The liver (fig. 1) and spleen (fig. 2) of an infected rabbit are studded over the surface with small spots varying in size from that of a pin point to one-sixteenth inch in diameter. Of 22 cases of tularaemia occurring in that city, 17 of the patients had dressed wild rabbits bought or sold in the market, 4 had dressed rabbits shot near by, and 1 had dressed a rabbit which he had killed with a club.

Of 420 reported cases of tularaemia, 17 have died, which places the mortality at about 4 per cent. These figures embrace only the cases which have been reported to the Public Health Service, but considering the newness of the disease, they probably represent only a portion of the actual number of cases and deaths. Cases have now been reported from Japan, from the District of Columbia, and from 37 States, the nine northeastern States being the only significant portion of the United States in which cases have not been recognized.

As a rule, when the infection has come from a rabbit some injury has been inflicted on the hand while dressing the rabbit, although a manifest injury is not necessary for infection to occur. Usually an ulcer develops at the site of infection, accompanied by enlargement of the lymph glands which drain the ulcer. Fever is always present and continues for two to three weeks. The primary lesion may be located in the conjunctival sac or on parts of the body other than the

[1] Francis, Edward Tularaemia in the Washington, D. C., Market. Pub. Health Rep., 38: 1391–1396 (June 22) 1923.

Fig 1 —Liver of rabbit having tularaemia showing it spotted with small areas of focal necrosis (A M M 37526)

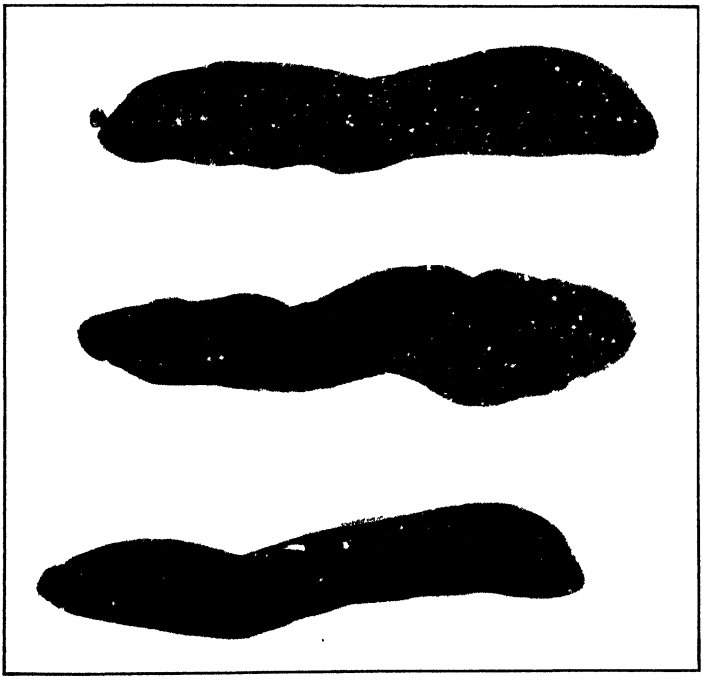


Fig 2 —Spleens of rabbits having tularaemia, showing small areas of focal necrosis (A M. M 37532)

skin of the hands, if due to tick bite or fly bite. The diagnosis is confirmed by the agglutination test or by isolation of the micro-organism. One attack confers immunity in man. Rest in bed is the most important treatment. The enlarged lymph glands should be incised only after suppuration has been well established.

The infection has never been found in nature in domestic rabbits raised in rabbitries.

PREVENTION

No preventive vaccine or curative serum has been perfected, nor has any special drug been found effective against tularaemia.

Rabbit meat, thoroughly cooked, is harmless for food; and it has been found that a temperature of 56° C., or 133° F., kills the infecting organism. The ordinary disinfectants are effective. Rubber gloves should be worn by those who must dress wild rabbits. Immune persons should be employed to dress them where possible. Infected rabbits, kept frozen for 30 days, have been found to be free from infection. Market inspection of rabbits is impracticable, because only about 10 per cent of the rabbits found in the market still have the liver in place.

Finally, beware of the wild rabbit which the dog or cat has caught, or which a boy has killed with a club—it is probably a sick rabbit. The hunter should not shoot his rabbits at the point of his gun. Let him be a sportsman and shoot them on the run at 75 yards, say, and the chances will be lessened that the rabbits he bags will be sick with tularaemia.

POLIOMYELITIS CASES REPORTED BY STATES, OCTOBER 23 TO NOVEMBER 19, 1927, AND CORRESPONDING WEEKS OF 1925 AND 1926

Forty-three States reported 296 cases of poliomyelitis for the week ended November 19, 1927, 317 cases for the preceding week, and 400 cases for the week ended November 5, 1927.

Data are available from 41 States for the week ended November 19, 1927, and the corresponding weeks of the years 1925 and 1926. These States reported 280 cases of poliomyelitis for the week in 1927; 40 cases in 1926, and 70 cases for the week in 1925.

The following table gives a comparison of the telegraphic reports from State health officers for the four-week period from October 23 to November 19, 1927, with the reports from the same sources for the corresponding period of the years 1925 and 1926. This table is a continuation of tables appearing in the Public Health Reports, October 7, 1927, page 2452, and November 4, 1927, page 2726. Reports for the week ended November 26, 1927, will be found on page 2977 of this issue.

Cases of poliomyelitis reported by State health officers October 23–November 19, 1927, compared with reports for the corresponding weeks of 1925 and 1926

State	Week ended— Oct. 29, 1927	Oct. 30, 1926	Oct. 31, 1925	Nov. 5, 1927	Nov. 6, 1926	Nov. 7, 1925	Nov. 12, 1927	Nov. 13, 1926	Nov. 14, 1925	Nov. 19, 1927	Nov. 20, 1926	Nov. 21, 1925
Alabama	1	0	0	0	1	1	1	0	2	0	2	1
Arizona	1	0	0	0	0	0	0	0	0	0	0	2
Arkansas	2	0	1	1	0	0	1	1	0	4	0	0
California	30	1	4	35	5	11	23	2	15	26	6	13
Colorado	------	0	1	7	1	0	6	0	0	2	0	1
Connecticut	9	4	0	7	0	1	3	0	1	6	1	1
Delaware	0	0	0	1	0	0	0	0	0	0	0	0
District of Columbia	1	1	0	0	1	1	0	0	1	------	0	0
Florida	3	0	0	1	0	1	2	0	0	0	0	1
Georgia	0	0	2	0	0	2	0	4	0	0	0	0
Idaho	2	0	------	8	0	------	11	0	------	3	0	------
Illinois	25	4	7	14	2	11	18	4	0	17	3	3
Indiana	19	2	3	11	2	7	7	0	3	7	1	2
Iowa	8	0	------	3	0	------	7	0	5	4	0	3
Kansas	14	3	6	4	1	4	3	1	2	2	0	0
Louisiana	2	0	1	0	1	3	0	0	2	1	1	3
Maine	6	1	0	5	0	0	7	3	1	3	0	2
Maryland	3	1	4	1	1	1	2	0	1	2	0	0
Massachusetts	66	6	4	56	10	5	38	7	3	30	4	2
Michigan	18	0	0	14	0	0	8	0	0	11	0	0
Minnesota	6	2	18	3	0	5	2	0	4	6	0	4
Mississippi	0	1	0	3	0	0	0	0	0	1	1	0
Missouri	12	0	4	7	0	1	6	0	1	5	0	1
Montana	0	0	0	1	0	0	1	0	0	2	0	0
Nebraska	14	1	7	10	3	2	5	1	3	4	1	2
New Jersey	8	1	2	9	2	4	3	2	1	3	4	1
New Mexico	3	0	1	2	0	1	3	0	1	3	0	1
New York	31	14	6	23	9	23	18	12	11	15	9	8
North Carolina	1	2	0	2	3	2	0	2	0	1	0	2
North Dakota	0	0	1	1	0	3	6	0	1	------	0	1
Ohio	51	------	------	54	------	------	26	------	------	27	------	------
Oklahoma	7	0	0	3	2	1	3	2	1	2	0	1
Oregon	26	1	0	20	1	2	22	0	0	33	0	0
Pennsylvania	18	3	------	18	6	6	27	2	0	21	2	0
Rhode Island	4	------	0	3	0	1	2	0	0	3	0	0
South Carolina	2	10	4	4	2	2	1	4	0	3	2	2
South Dakota	6	0	2	7	1	0	6	1	6	5	0	1
Tennessee	2	0	------	4	0	------	5	0	------	8	0	------
Texas	3	0	0	11	2	2	5	0	1	6	0	1
Utah	2	1	0	2	0	1	0	0	0	1	0	0
Vermont	6	0	2	------	0	2	------	0	4	2	1	3
Virginia	2	0	0	0	0	0	1	0	0	0	0	1
Washington	21	0	9	26	1	4	26	0	1	11	0	3
West Virginia	9	2	0	12	0	0	8	0	------	13	0	0
Wisconsin	9	4	14	8	2	7	9	3	6	5	2	3
Wyoming	1	0	0	0	2	0	1	1	1	0	0	1

CASES OF SMALLPOX REPORTED BY STATES FOR THE FIRST THREE WEEKS OF NOVEMBER, 1925, 1926, AND 1927

Forty-one States reported 445 cases of smallpox for the week ended November 19, 1927, 363 cases for the corresponding week of last year, and 300 cases for the week in 1925.

Forty-three States reported for the first three weeks of November, 1927. These States reported 493 cases of smallpox for the week ended November 5, 1927, 423 cases for the following week, and 470 cases for the week ended November 19, 1927.

The New England and North Atlantic States report very few cases of smallpox. The disease is prevalent in localities well scattered over the rest of the country, especially in the Northern States, and extending to the Pacific coast.

The following table summarizes the reports from State health officers for the first three weeks of November of the years 1925, 1926, and 1927.

Cases of smallpox reported by State health officers October 30–November 19, 1927, compared with reports for the corresponding weeks of 1925 and 1926

State	Week ended—								
	Nov. 5, 1927	Nov. 6, 1926	Nov. 7, 1925	Nov. 12, 1927	Nov. 13, 1926	Nov. 14, 1925	Nov. 19, 1927	Nov. 20, 1926	Nov. 21, 1925
New England States:									
Maine	0	0	0	0	0	0	0	0	0
Vermont	0	0	0	-----	0	0	0	0	0
Massachusetts	0	0	0	1	0	0	0	0	0
Rhode Island	0	0	0	0	0	0	0	0	0
Connecticut	0	0	0	0	0	0	0	0	0
Middle Atlantic States:									
New York	7	6	1	6	44	0	5	17	0
New Jersey	0	0	0	0	0	0	0	0	0
Pennsylvania	0	0	0	0	0	1	0	2	0
East North Central States:									
Ohio	-----	-----	-----	6	-----	-----	9	-----	-----
Indiana	38	29	71	65	72	69	41	83	44
Illinois	13	4	14	45	5	33	37	9	15
Michigan	18	10	4	21	33	2	7	28	9
Wisconsin	28	3	0	19	4	5	17	11	11
West North Central States:									
Minnesota	1	3	4	1	2	7	0	4	1
Iowa	41	0	-----	54	8	5	19	6	23
Missouri	82	1	2	52	2	2	75	0	4
North Dakota	3	9	3	6	2	3	-----	7	1
South Dakota	3	2	5	3	1	0	3	0	1
Nebraska	11	12	6	6	7	5	11	11	5
Kansas	27	0	2	37	5	5	20	2	11
South Atlantic States:									
Delaware	0	0	0	0	0	0	0	0	0
Maryland	0	0	0	0	0	0	0	0	0
District of Columbia	1	0	0	0	0	0	-----	0	0
Virginia	0	0	13	0	0	0	0	0	9
West Virginia	8	0	0	5	1	-----	6	1	0
North Carolina	15	30	14	14	22	5	11	31	10
South Carolina	16	4	1	7	4	9	8	0	13
Georgia	0	6	3	0	9	2	0	13	6
Florida	0	7	0	5	3	1	1	11	7
East South Central States:									
Tennessee	5	0	-----	1	2	-----	2	2	-----
Alabama	8	5	49	1	4	22	0	1	6
Mississippi	12	1	0	1	1	2	11	3	3
West South Central States:									
Arkansas	0	0	1	2	2	0	3	0	1
Louisiana	5	2	1	3	2	5	3	2	1
Oklahoma	24	24	1	2	33	2	40	40	8
Texas	5	4	0	12	3	1	6	9	0
Mountain States:									
Montana	30	28	6	3	1	2	6	6	11
Idaho	3	0	-----	1	0	-----	14	0	-----
Wyoming	0	0	1	0	1	3	1	0	0
Colorado	4	7	0	6	39	0	12	0	0
New Mexico	0	0	0	0	0	1	0	0	0
Arizona	0	0	0	0	0	0	0	0	0
Utah	47	1	1	9	0	8	45	2	0
Pacific States:									
Washington	17	26	31	24	8	42	11	29	41
Oregon	18	9	14	5	18	31	38	24	21
California	7	13	30	6	42	40	8	12	39

PUBLIC HEALTH ENGINEERING ABSTRACTS

Cleaning Milking Machines. R. C. Fisher and G. C. White. *Connecticut Storrs-Station Bul. 144* (1927), pp. 20. Taken from *Experiment Station Record,* U. S. Department of Agriculture, vol. 57, No. 5, October, 1927, pp. 465–466.

"The cleaning and sterilizing of the rubber parts of the milking machine is the chief problem in its operation. Trials were conducted employing four methods of sterilization. The agents used were B. K. disinfectant, hot water, steam, and cold running water. A total of about eight weeks was used with each method. Bacterial counts were made of the milk drawn with parts sterilized in the different manners, records were kept of the time consumed in the care of the machines, and observations were made of the effect of the various agents upon the rubber parts. After milking, cold water was drawn through each machine, and this was followed by drawing hot water through the tubes. The equipment was taken apart once a week and cleaned with a brush. The milk pails were sterilized daily with steam.

"As previously noted (E. S. R., 56, p. 870), the B. K. solution at usual strength was unreliable in keeping down bacteria. Double strength solution (8 ounces to 10 gallons of water) was suitable if changed twice a week, or if a 4-ounce charge is added every other day. Hot water sterilization at 200° F. for 0.5 hours gave low bacterial counts, and the damage to the rubber parts was not prohibitive in this method. Sterilizing at lower temperatures was not reliable. Steam sterilization, while effective in killing bacteria, was quite destructive to rubber. Running cold water below 55° F. was effective, but is not reliable in summer because of the high temperature of the water. Whatever the treatment, the bacterial accumulation in the tubes may be reduced by rinsing in cold water just previous to milking and by scrubbing the tubes at least twice a week."

Direct Microscopic Examination of Milk. LeRoy Forman and I. H. Shaw, *Public Health News,* Department of Health of the State of New Jersey, vol. 12, No. 6, May, 1927, pp. 143–149. (Abstract by J. R. Hoffert.)

Detailed experiments by the authors to determine the value of direct bacterial count of milk as evidence of its sanitary quality.

10-c. c. samples were centrifuged, a smear on slides was made of sediment and this was defatted, fixed, clarified, stained, and examined under X900 magnification. Comparisons of direct count results, with field examination of cows suffering from mastitis, showed close relation between the two.

Dilution tests of certified milk contaminated with milk from infected cows indicated that it could be detected in high dilution.

Examination of dairies and market milk was begun and the direct counts were found to parallel the conditions of the cows and sanitary conditions of the dairy. This visible method roused the interest of the dairymen, secured their cooperation, and resulted in improved relations between inspectors and dairymen.

Incinerator at St. Lambert, Quebec. Anon. *Canadian Engineer,* vol. 52, No. 7, February 15, 1927, p. 221. (Abstract by R. E. Thompson.)

A brief illustrated description of the new incinerator installed at St. Lambert, a city of 5,000 population. The specifications required—(1) That the plant would properly incinerate at the rate of 2 tons per hour; (2) that the residue would not contain more than 2 per cent organic matter, exclusive of carbon; (3) that there would be no smoke escape from chimney of a degree of density greater than No. 1 Ringleman; (4) that there would be no dust emitted from the chimney; (5) that the man-hours per ton would not exceed 0.5. The plant was accepted by the city after tests were carried out on January 17 and 18, 1927. The furnace comprises two independent cells with common combustion chamber, the cells being of the Hankin high-temperature, top-feed type, with

drying arches and hearths and forced draught equipment. The chimney is of the Hankin radial, brick type, 75 feet high, lined to half its height. The cost of the plant was approximately $19,000.

House Refuse Collection and Disposal at Ruislip-Northwood. Anon. *Surveyor*, vol. 71, No. 1848, June 24, 1927, p. 632.

"In his report for 1926, Dr. L. W. Hignett, Medical Officer of Health to the Ruislip-Northwood Urban District Council, states that a weekly collection of house refuse was carried out in that area during the year by means of Fordson tractors and trailers. The refuse from the whole of the district is conveyed to the destructor site at Eastcote, where it is sorted and screened and the inflammable part (paper, etc.) burnt in the open. This tip is some distance from any inhabited houses, and no nuisance has been caused by this method of disposal. Portable sanitary dust-bins are provided and maintained by the house owners. The removal and disposal of house refuse has been very satisfactory. No nuisance has been caused and only seventeen complaints of a trivial nature were received during the year."

Garbage Collection and Disposal in a Town of 12,000 Population. John P. Broome. *American City*, vol. 37, No. 3, September, 1927, pp. 333–335. (Abstract by D. W. Evans.)

After trying out private collection of garbage and ashes, the town of Summit, N. J., decided to undertake the work municipally. Collections are made in the cellars, and for that reason horse and cart replaced the trucks which were formerly in use. This method was adopted not only for economical reasons but because of possible damage by heavy trucks to private driveways. Eight men are employed to collect garbage, with a like number for ashes, and each man is responsible for satisfactory service on his particular route.

Disposal of garbage is made by incineration; ashes are used as fill material.

Garbage and Refuse Disposal at Fort Dodge, Iowa. Byron Bird, *Water Works*, vol. 66, No. 6, June, 1927, pp. 235–239. (Abstract by R. J. Faust.)

This article is a brief history of garbage collection and disposal at Fort Dodge, Iowa. Systematic collection dates back to 1909, when the first city ordinance relating to garbage was passed. At that time the city provided dumping grounds outside the city limits. Collections were made by private companies. In 1924 an ordinance was passed compelling all garbage and refuse collectors to be licensed, and with this step came the erection of an incinerator. Collection by city employees has been a recent development. It is interesting to note that the incinerator is equipped to burn spent crank-case oil. The incinerator has given complete satisfaction.

Rivers Pollution Prevention, with Special Reference to the Work of the Association of Managers of Sewage Disposal Works. J. H. Garner. (Presented at Annual Summer Conference at Bedford, England, of Association of Managers of Sewage Disposal Works, July 8, 1927.) Proof copy, pamphlet, 15 pp. Published in abstract in *The Surveyor*, vol. 72, July 22, 1927, pp. 71–73. (Abstract by J. K. Hoskins.)

This paper is a general review of the stream pollution situation in Great Britain and the various proposals made and steps that have been taken for mitigation of pollution. The present conditions obtaining in tidal waters and estuaries, industrial rivers and streams, and in nonindustrial rivers and streams, are briefly reviewed. In general, "it may be said that the aggregate amount of stream pollution in the country is now remaining about stationary, but there is a distinct tendency for that pollution to become more widely disseminated and more varied in character." Streams in the older industrial areas, because of remedial measures, are improving; in newer areas they are becoming worse, due to the increase of either industrial or domestic sewage pollution.

Proposals for improvement of these conditions include the survey and classification of streams and watershed areas, the admission of liquid trade wastes to public sewers, the formation of additional river boards, and provision for increased research in fundamental problems of stream pollution and sewage treatment. Some progress has been made in classification of streams based on the recommendations of the Royal Commission of Sewage Disposal and using as a criterion the amount of dissolved oxygen absorbed in five days. The Standing Committee on Rivers Pollution has, during the past five years, attempted to classify streams from a fisheries standpoint into—(a) Those sufficiently pure to support a considerable stock of fish; (b) those polluted, but yet able to maintain a certain number of fish; and (c) those so grossly polluted that fish life is practically extinct. For this classification, reliance was placed on the actual amount of dissolved oxygen present in the water rather than upon the Royal Commission test. The Pennsylvania plan of stream classification is also reviewed.

The benefits as well as the administrative difficulties of dischargeing industrial wastes into public sewers and to treatment plants are discussed at some length. The advantages of and objections to local rivers boards are also presented. The need for cooperative research in fundamental as well as in local problems is stressed.

The Need for Research in Connection with the Purification of Sewage. Arthur J. Martin. *The Surveyor*, vol. 72, No. 1854, August 5, 1927, pp. 119–120. (Abstract by W. M. Olson.)

A plea for an organized attack on sewage treatment problems. Something ought to be done about this: (1) Engineers waste client's money on old ineffective processes or risk it on doubtful experiments because of the lack of well established limits within which various processes may be used; (2) obstacles such as the difficulty of introducing a bill in Parliament, the general shortage of money, and prejudice against establishing a new government department have hindered reforms which, since 1897, have been generally recognized to be of primary necessity; (3) coordination and adequate support by individual sewage works managers, the rivers boards, and the universities; (4) materials and appliances for sewage treatment should be tested by some official agency; (5) the results of research should be made readily available through a journal covering the field.

Purposes: (1) A government laboratory similar to the National Physical Laboratory; (2) a conference of those interested in sewage treatment.

Regarding the Procedure in Sludge Digestion. F. Sierp. *Tech. Gemeindebl.*, vol. 29, No. 21, pp. 267–271; No. 22, pp. 282–285; No. 23, pp. 296–301; No. 24, pp. 305–312 (1927). Translation of an abstract by Kammann in *Zentralblatt für die Gesamte Hygiene*, vol. 15, No. 11–12, August 10, 1927, p. 496. (Abstract by J. K. Hoskins.)

The process of decomposition in the sludge chamber in the presence of excess and subnormal pressure was investigated. An excess pressure had no influence on the gas production or even on the general decomposition of the organic material. With subnormal pressure, in contrast with the studies of Watson and Watsaws, an increase of the generated gas occurred, evidently on account of the more rapid withdrawal. A more rapid decomposition of the organic material did not, however, take place under these conditions. In opposition to other authors, light had no effect on the process in the digestion chamber. Phenols in the sewage affected the gas-forming bacteria more unfavorably than the liquefiers. More sulphates in the sewage resulted in higher hydrogen sulphide content in the gas. Introduction of oxygen delayed and injured the digestion process, as the rapid development of the hydrogen sulphide oxidizing bacteria was arrested. Sewage containing sulphates delays the decomposition process,

and in such cases larger digestion tanks are therefore essential. Acid sewage modifies the digestion process, especially by slight changes of the hydrogen ion concentration. The addition of 10 g. of chlorine to 1 m.^{3} of sewage sterilises the precipitated sludge so completely that its ability to decompose is practically destroyed. Sodium chloride solutions up to 1 per cent have absolutely no effect on the sludge digestion process; up to 3 per cent it is decreased about 20 per cent. These phenomena are explained by a peptonizing action of the salt on the sewage colloids. Sodium chloride diffuses only slightly in sludge mixtures and also the salt in the sludge diffuses very slowly in the surrounding water. Therefore, the amount of sodium chloride present affects the regular automatic conversion of sludge in the digestion tank.

Recent Progress in Sewage Disposal and Stream Pollution Problems in the United States. I W. Mendelsohn. Bulletin 88, Engineering Extension Dept., Iowa State College, March 5, 1927, pp. 5–17. (Abstract by I. W. Mendelsohn.)

Among the recent developments in sewage disposal and stream pollution in the United States are—(1) Cooperation between governmental bodies and private industry; (2) recognition of the joint need of sewage treatment and water purification in certain streams; (3) improved status of sewage plant operators, and importance of pure research in stream pollution. The desirability of cooperation among laboratories and other research workers in solving stream pollution problems is pointed out.

Pollution of Streams in Illinois. Anon. Illinois Division of State Water Survey, Bulletin No. 24, February, 1927. (Abstract by I. W. Mendelsohn.)

This bulletin presents data concerning sources of stream pollution in Illinois, not only of domestic sewage but also of industrial wastes as collected in a survey in the period 1924–26, inclusive. There were 227 towns with sewers, 108 towns having sewage treatment, and 305 industries producing organic pollution and 559 inorganic pollution. The results of the survey are presented in maps, each covering a drainage area, with notations regarding sources of pollution. There is also given a list of the counties of the State including the known pollution factors in each, such as (1) population of the community; (2) existence of a sewer system and its type; (3) character of sewage treatment; and (4) nature and number of industries having liquid wastes.

Report on the Activities of the North Holland Committee on the Public Fight Against Malaria. Anon. *Verslagen En Mededeelingen Betreffende De Volksgezondheid*, No. 7, July, 1926, pp. 725–775. (Abstract by Frank Hannan.)

Finance.—A government subsidy constitutes about one-half of the modest income available, the remainder being made up in approximately equal shares by the province on the one hand and the communes on the other. The total comes to about 2 cents per capita.

Activities.—(1) Organization: The original central committee has created 11 district committees with a view to decentralization and to the stimulation of local activity. In each district a paid propagandist works for five months in the year. (2) Propaganda: Literature is distributed; wall charts are exposed in railway stations, post offices, physicians' offices, and other prominent places. The propagandist pays house to house visits demonstrating the course of malarial infection, the best methods for excluding and for destroying mosquitoes, and the necessity for skilled medical attention in malaria cases; a malaria film is rented out; lantern lectures are given; advice is given; a stall was fitted up at the great White Cross Jubilee Exhibition at Alkmaar. (3) Mosquito destruction: The propagandist on his rounds destroys the over-wintering mosquitoes in house and stable, at the same time, and with increasing success, urging upon the people to do this for themselves. While 3 per cent lysol solution was, in earlier years, the best available spraying fluid, Flyosan and other spraying fluids are now on

the market, of which Flyosan is considered the best. Flyosan in the proportion of 0.5 c. c. per m.[3] destroys not only mosquitoes but also the ordinary house fly and all except highly resistant insects. Its drawback is its comparatively high price. Detailed reports of the propagandists are appended.

The Food of Anopheline Larvæ—Food Organisms in Pure Culture. M. A. Barber. *Public Health Reports* (U. S. Public Health Service), vol. 42, No. 22, June 3, 1927, pp. 1494–1510. (Abstract by Chester Cohen.)

The purpose of the article is to demonstrate the importance of various foods as factors in the growth of anopheline larvæ. The method employed was to place sterilized mosquito eggs in a culture media containing only a known available food supply. The technique employed in sterilization of the eggs is given. Mosquito eggs were placed in cultures containing a combination of protozoan, algæ, bacteria, and yeasts, and also in pure cultures of the protozoans and algæ. The reactions of the eggs to concentration conditions and quality of food, pH, light, and temperature, are carefully considered.

The results are as follows: (1) Algæ alone, bacteria alone, or infusoria alone may constitute a sufficient source of food for anopheles larvæ; (2) dead organic material, in cultures at least, is far less suitable than living organic material as a source of food; (3) antilarval measures based on the destruction of available food must take into consideration the adaptability of larvæ to various food organisms.

The Mosquito Infectivity of P. Vivax After Prolonged Sojourn in the Human Host. Warrington Yorke and W. Rees Wright. *Ann. Trop. Med. and Parasitol.* 20 (3): 327–328 (1926). From *Biological Abstracts*, vol. 1, Nos. 2–3, April, 1927, pp. 3081–3092.

"This observation shows that the strain in question had preserved unimpaired its power to infect mosquitoes after 53 or 54 direct passages through man during a period of 3½ years."

Water Shortage in Indiana. Lewis T. Finch. *Journal of American Water Works Association*, vol. 17, No. 3, March, 1927, pp. 327–335. (Abstract by M. S. Foreman.)

The public water supplies of Indiana are obtained from a variety of sources; namely, shallow and deep driven wells, dug wells, streams, and natural and impounded lakes and springs. The ground water supplies have caused considerable apprehension in recent years. The ground water level, in some places, as pointed out in a table, has dropped from 3 to 48 feet in a few years' time. In a number of other instances water shortage has been due to the rapid increase of population of towns and cities, where no provision has been made to supply the increased demand. When the seasonal rainfall is below normal, many small towns, in particular, are hard pressed to obtain an adequate water supply. Fort Wayne has had particular difficulty to supply the demand for water. During part of last year, some sections of the city were without water.

The result of the inadequate and temporary water supplies has been a marked increase in the number of cases of typhoid fever. Seven towns in the State are furnishing water that is known not to be fit for drinking purposes.

A Study of the Chlorine Absorption of Water. Jacob R. Meadow and Harrison Hale. *Journal American Water Works Association*, vol. 18, No. 1, July, 1927, pp. 75–81. (Abstract by D. E. Kepner.)

The purpose of this investigation was to compare the permanganate method of oxygen consumed in water analysis with that of the chlorine absorption test, by different waters. It was found that a correlation exists between the results of the two methods as long as no albuminous material is present, and when such is present the chlorine absorption test is the most reliable. Chlorine absorption

was determined after 10 minutes' contact by both the orthotolidin and starch-iodide tests.

Operation of Rapid Sand Filtration Plant of Cambridge, Mass. Melville C. Whipple. *Water Works*, vol. 66, No. 3, March, 1927, pp. 121–123 (Abstract by J. L. Robertson.)

The writer describes the design, operation, difficulties experienced, and improvements necessitated in the operation of the rapid sand filtration plant of Cambridge, Mass.

The original design returned the wash water to the coagulation basin, bringing about a number of objectionable conditions interfering with operation. Chlorination of raw water, in order to dispose of some of the bacteria, did not appreciably overcome the detrimental effects of returning the wash water from the filters. There was also a temporary increase in the rate of flow through the basin following each filter washing. This pulsating effect upon subsistence resulted in deposits of sludge, thus reducing detention period. Operation of difficulties experienced made necessary the elimination of the practice of returning the filter wash water to the coagulation basin.

Phenol Tastes in Chlorinated Water. L. C. Osborn. *Journal American Water Works Association*, vol. 17, No. 5, May, 1927, pp. 586–590. (Abstract by L. M. Fisher.)

After sterilizing its water supply for 15 years the city of Loveland, Colo., experienced tastes in the chlorinated water. The phenol tastes were due to a new creosoted wood water main. The tastes were not noticeable when the water was not chlorinated.

On another occasion a small quantity of water splashed over some gratings dipped in tar thinned with gasoline and caused numerous complaints. A very small quantity of phenol is sufficient to cause trouble.

The intensity of chloro-phenol tastes is greatest when the greatest time has elapsed since chlorination (within limits, of course). The tastes may be due to the action of chlorinated water on sediment, scale, or coating in the pipes.

Electrolytic Chlorination at Sacramento Filtration Plant. Harry N. Jenks. *Journal American Water Works Association*, vol. 17, No. 5, May, 1927, pp. 514–537. (Abstract by L. M. Fisher.)

Electrolytically manufactured chlorine has been used at Sacramento, Calif., for 2½ years. It has been found very reliable and economical. In remote places where transportation is difficult it has advantages over liquid chlorine. Current at Sacramento costs \$0.865 per kilowatt-hour and salt \$7.70 per ton in the storage bins. The cost of electrolytic chlorine per pound was \$0.0566. The cost of liquid chlorine applied to the water was estimated at \$0.1313 per pound. A saving of 57 per cent was thus effected. The usefulness of this method at water, sewage, and industrial plants in isolated places is stressed.

Details are given of construction of the concrete cells employed.

Operating Results at Iron Removal Plant at Memphis, Tenn. F. A. Mantel. *Engineering News-Record*, vol. 98, No. 21, May 26, 1927, p. 855. (Abstract by A. S. Bedell.)

The municipally owned water supply of Memphis is derived from 29 new wells pumped by air lift from a central station. Twenty-two of these wells, placed in service in June, 1924, are from 350 to 530 feet deep, while the seven wells since installed are 1,400 feet deep. Two tables give comparative analyses (markedly different) from the two groups of wells and the operating results for 2½ years. The underground water contains objectionable quantities of iron, carbon dioxide, and hydrogen sulphide, which are removed in purification works. The CO_2 in the ground water, assumed to be 120 p. p. m., is largely removed by air lift

pumping and further reduced by coke aerators. Cost of aeration and filtration (18.4 per cent of total plant operation) is $3.34 per m. g.

Water Supplies from Sand and Gravel Formations. Anon. *Water Works*, vol. 66, No. 9, September, 1927, pp. 390–392. (Abstract by W. R. Schreiner.)

The use of "Fineness modulus" rather than "Effective size" and "Uniformity coefficient" is suggested. Fineness modulus for any sample of sand or gravel is obtained by adding the percentages, by weight, that are held on each of the sieves, 4, 20, 30, 40, and 60 meshes per inch. From actual experience with supplies in Wisconsin the following rating of water bearing possibilities of sand and gravel has been made with reference to fineness modulus: 100 or less, very poor; 100–140, poor; 140–200, fair; 200–250, good; 250–300, very good; over 300, excellent. Charts are given for ready application of the method. This system of grading materials gives more weight to coarse materials, avoids the error due to faulty methods of obtaining representative samples whereby the amount of fine material is increased in the process, and the "Effective size" is adversely affected.

The field tests for determining the actual capacity of any given formation to produce water are described in detail. A "law of flow" is stated and applications are made to show relation of "draw down" to gallons per minute pumped at various rates.

New Water Works Plant at Smith's Falls, Ontario. Anon. *Canadian Engineer*, vol. 52, No. 20, May 17, 1927, pp. 513–515. (Abstract by R. E. Thompson.)

Illustrated description of the evolution of the pumping equipment at the Smith's Falls water works, which is now driven by electricity generated from water power developed on the Rideau River, which flows through the town. The entire water rights on the river at this point were purchased when the filter plant and overhead tank were constructed.

Enslow Chlorine Comparator. W. A. Taylor. *Canadian Engineer*, vol. 52, No. 20, May 17, 1927, p. 527. (Abstract by R. E. Thompson.)

An illustrated description of the Enslow comparator for determining free chlorine by the o-tolidin method. The chlorine dosage required for sterilization of water is affected by the presence of organic matter or oxidizable salts, and also by the H ion concentration, as oxidation occurs more rapidly in the presence of free carbonic acid. The practical method of chlorination control is so to regulate the dosage that frequent samples, taken at point providing a 5-minute contact period, show a residual chlorine content of 0.1 to 0.2 p. p. m. Swimming-pool water should contain 0.2 to 0.5 p. p. m. of free chlorine at all times. In treatment of sewage effluents and trade effluents, a residual chlorine content up to 1.0 p. p. m. is necessary after 10 minutes' contact. In making free chlorine determinations on sewage and trade wastes, the reading should be made at time when maximum color has developed, which may vary from 1 to 15 minutes after addition of reagent.

Water Supply in South Wales. Anon. *Surveyor*, vol. 72, No. 1853, July 29, 1927, pp. 95–96. (Abstract by D. E. Kepner.)

This article gives a historical account and very brief description of the Taf Fechan water works, comprising an earth dam 1,010 feet long and 107 feet high, which forms a reservoir of 3,800,000,000 Imperial gallons' capacity, a "Patterson Rapid Filtration Gravity Plant" designed for 7,500,000 Imperial gallons daily, and several miles of cement-lined steel pipe.

SOME PUBLIC HEALTH SERVICE PUBLICATIONS SUITABLE FOR GENERAL DISTRIBUTION

There is given below a list of some nontechnical publications issued by the Bureau of the Public Health Service, covering a wide variety of subjects and suitable for general distribution.

The "Keep Well" publications constitute a series of small pamphlets which present important health facts in popular form.

The Public Health Bulletins have proved especially valuable for general distribution in connection with campaigns for health improvement, and are useful to health officers as an aid to the solution of many local health problems.

The most important articles that appear each week in Public Health Reports are reprinted in pamphlet form, making possible a wider and more economical distribution of articles that are of interest to health workers, sanitarians, and the general public.

Those publications not marked with an asterisk (*) are available for free distribution and, as long as the supply lasts, may be obtained by addressing the Surgeon General, United States Public Health Service, Washington, D. C. Those publications marked with an asterisk are not available for free distribution, but may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C., *at the prices noted.* (Send no remittances to the Public Health Service.)

Keep Well Series

*1. The road to health. Concise directions for keeping well—Table of average weights for men and women. 1919. 16 pages. 5 cents.

*3. How to avoid tuberculosis. 1919. 7 pages. 5 cents.

*4. Diphtheria. How to recognize it, keep from catching it, and treat those who do catch it. 1919. 15 pages. 5 cents.

*5. The safe vacation. Selection of a place to go and what to do in case of sudden accident or illness. 1919. 32 pages. 5 cents.

*6. Cancer facts which every adult should know. 1919. 30 pages. 5 cents.

*7. Vaccination: An excellent form of health insurance. 1919. 8 pages. 5 cents.

*8. Motherhood: Helpful advice to the expectant mother. 1919. 7 pages.

*10. Bottle Feeding for babies. Concise guide for mothers. 1919. 9 pages. 5 cents.

*12. Flat foot and other foot troubles. 1920. 16 pages. 5 cents.

*13. Good teeth. 1921. 16 pages. 5 cents.

Supplements to the Public Health Reports

*2. Indoor tropics. The injurious effect of overheated dwellings, schools, etc. By J. M. Eager. 1913. 8 pages. 5 cents.

8. Trachoma: Its nature and prevention. By John McMullen. 1913. (Revised 1923.) 6 pages.

11. What the farmer can do to prevent malaria. By R. H. von Ezdorf. 1914. 6 pages.

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*18. Malaria; Lessons on its cause and prevention (for use in schools). By H. R. Carter. 1914. (Revised in 1922.) 20 pages; 4 plates. 5 cents.

24. Exercise and health. By F. C. Smith. 1915. (Revised 1925). 7 pages.

29. The transmission of disease by flies. By Ernest A. Sweet. 1916. 20 pages; 2 plates. (Revised 1922.)

*30. Common colds. By W. C. Rucker. 1917. 4 pages.

31. Safe milk: An important food problem. By Ernest A. Sweet. 1917. 24 pages.

Public Health Bulletins

37. The sanitary privy: Its purpose and construction. By C. W. Stiles. 1910. 24 pages; 12 figures.

58. Open-air schools for the cure and prevention of tuberculosis among children. By B. S. Warren. 1912. 20 pages.

68. Safe disposal of human excreta at unsewered homes. By L. L. Lumsden, C. W. Stiles, and A. W. Freeman. 1915. 28 pages.

69. Typhoid fever: Its causation and prevention. By L. L. Lumsden. 1915. 22 pages.

70. Good water for farm homes. By A. W. Freeman. 1915. 16 pages.

89. A sanitary privy system for unsewered towns and villages. By L. L. Lumsden. 1917. 23 pages.

*101. Studies of methods for the treatment and disposal of sewage: Treatment of sewage from single houses and small communities. By Leslie C. Frank and C. P. Rynus. 1919. 117 pages. 25 cents.

*103. The rat: Arguments for elimination and methods for destruction. 1919. 12 pages. 5 cents.

110. Synopsis of child hygiene laws of the several States, including school medical inspection laws. By Taliaferro Clark and Selwyn D. Collins. 1921. 58 pages. (Revised May, 1925.)

*112. Report on Oregon State survey of mental defects, delinquency, and dependency. By C. L. Carlisle. 1921. 79 pages. 10 cents.

*114. Top minnows in relation to malaria control. Notes on habits and distribution. By S. F. Hildebrand. 1921. 34 pages. 10 cents.

*116. Lead poisoning in the pottery trades. By B. J. Newman, W. J. McConnell, O. M. Spencer, and F. M. Phillips. 1921. 223 pages. 35 cents.

121. Rodent infestation and rat-proofing conditions in Massachusetts seacoast cities, New York, and Baltimore. By L. L. Williams, E. C. Sullivan, and A. F. Allen. 1922. 38 pages.

*127. The epidemiology of botulism. By J. C. Geiger, K. F. Meyer, and E. C. Dickson. 1922. 119 pages. 15 cents.

*129. Communicable diseases and travel. By Thomas R. Crowder, 1922. 62 pages. 10 cents.

*131. Section No. 1 of general report on Ohio River investigation. A study of pollution and natural purification of the Ohio River. Plankton and related organisms. By W. C. Purdy. 1923. 78 pages. 15 cents.

132. Studies of 15 representative sewage plants in the United States. By E. J. Theriault and H. H. Wagenhals. 1923. 260 pages.

*134. The campaign against malnutrition. 1923. 37 pages. 5 cents.

*135. Railroad malaria surveys. 1922. The Missouri Pacific Railroad. By A. W. Fuchs. 1923. 36 pages. 10 cents.

*136. Report of the committee on municipal health department practice, of the American Public Health Association. 1923. 468 pages. 50 cents.

*138. Tuberculosis survey of the island of Porto Rico, October 11, 1922, to April 18, 1923. By J. G. Townsend. 1923. 98 pages. 35 cents.

*153. A study of the top minnow Gambusia Holbrooki in its relation to mosquito control. By Samuel F. Hildebrand. May, 1925. 136 pages. 30 cents.

Reprints from Public Health Reports

100. Whooping cough: Its nature and prevention. By W. C. Rucker. 1912. 7 pages. (Revised 1922.)

*105. Antimalarial measures for farm houses and plantations. By H. R. Carter. 1912. 8 pages. 5 cents.

*167. Relative efficiency of rat traps: Trap which proved most effective in Manila. By Victor G. Heiser. 1914. 2 pages. 5 cents.

*170. Prevention of malaria. How to screen the home. By R. H. von Ezdorf. 1914. 6 pages. 5 cents.

183. Screening as an antimalarial measure. By H. R. Carter. 1914. 12 pages.

*187. Prevention of typhus fever. With especial reference to delousing. By Joseph Goldberger and M. H. Neill. 1914. 14 pages. 5 cents.

256. The limitations to self-meditation. Uses and abuses of proprietary preparations and household remedies. By Martin I. Wilbert. 1915 6 pages.

258. Malaria control: Drainage as an antimalarial measure. By J. A. A. Le Prince. 1915. 11 pages.

260. Control of malaria: Oiling as an antimosquito measure. By J. A. A. Le Prince. 1915. 12 pages.

*349. Hay fever and its prevention. By W. Scheppegrell. 1916. 12 pages; 6 plates. 10 cents.

*387. Climate and tuberculosis: Relation of climate to recovery. By John W. Trask. 1917. 8 pages. 5 cents.

*456. The application of ozone to the purification of swimming pools. By Wallace A. Manheimer. 1918. 8 pages. 5 cents.

*527. Fishes in relation to mosquito control in ponds. By Samuel F. Hildebrand. 1919. 15 pages; 6 plates. (Revised 1922.) 10 cents.

532. A disposal station for a can privy system. By E. B. Johnson. 1919. 6 pages; 2 plates.

552. The malaria problem in the South. By H. R. Carter. 1919. 11 pages.

584. Ivy and sumac poisoning. By E. A. Sweet and C. V. Grant. 1920. 16 pages; 2 plates. 5 cents.

622. Children's teeth, a community responsibility. By Taliaferro Clark and H. B. Butler. 1920. 18 pages; 1 plate.

625. Sanitary disposal of sewage through a septic tank: Simple construction and inexpensive operation for isolated dwellings. By H. R. Crohurst. 1920. 8 pages.

626. The bedbug: Relation to public health, habits, life history, methods of control. 1920. 8 pages.

645. The fate of the first molar. By H. B. Butler. 1921. 6 pages.

654. Nutrition in childhood. By Taliaferro Clark. 1921. 10 pages. (Revised 1926.)

655. Guide to proper rat-proofing of buildings. By C. E. Hauer. 1921. 13 pages.

672. The standard treatment for malaria. By C. C. Bass. 1921. 4 pages.

*674. Sickness among school children: Loss of time from school among 6,130 school children in 13 localities in Missouri. By S. D. Collins. 1921. 11 pages. 5 cents.
*682. The work of the Public Health Service in the care of disabled veterans of the World War. By H. S. Cumming. 1921. 10 pages. 5 cents.
*683. School health supervision in Minneapolis, Minn. By Taliaferro Clark. 1921. 35 pages. 5 cents.
*694. Carbon monoxide poisoning in closed garages. 1921. 6 pages. 5 cents.
*698. Diphtheria immunization. 1921. (Revised 1924.) 6 pages. 5 cents.
707. Good teeth: The importance of good teeth and the prevention of decay. 1921. 10 pages.
727. The care of your baby. 1922. (Revised in 1925.) 40 pages.
*750. Heights and weights of school children. By Taliaferro Clark, Edgar Sydenstricker, and S. D. Collins. 1922. 22 pages. 10 cents.
753. Adenoids. What they are and how to treat them. 1922. 2 pages; 1 plate.
*754. The delinquent. By Frank E. Leslie. 1922. 10 pages. 5 cents.
780. Measles: An important disease from the public health standpoint. By W. C. Rucker. (Revised edition of Supplement No. 1.) 1922.
783. The school nurse: Her duties and responsibilities. By Taliaferro Clark. 1922.
*789. Dried milk powder in infant feeding. By Taliaferro Clark and S. D. Collins. 1922. 5 cents.
*793. School absence of boys and girls. By Selwyn D. Collins. October 27, 1922. 5 pages. 5 cents.
*798. Nutrition and education. By E. Blanche Sterling. November 10, 1922. 10 pages. 5 cents.
809. Weight and height as an index of nutrition. By Taliaferro Clark, Edgar Sydenstricker, and Selwyn D. Collins. January 12, 1923. 22 pages.
816. Health scoring of school children. By Taliaferro Clark and Edith B. Lowry. February 16, 1923. 12 pages.
*819. The trachoma problem in the State of Minnesota. By Taliaferro Clark. March 2, 1923. 21 pages. 5 cents.
*821. Changes in a small town brought about by the health department. By B. B. Bagby. March 9, 1923. 4 pages. 5 cents.
*825. Schick tests and immunization against diphtheria in the eighth sanitary district of Vermont. By C. W. Kidder. March 30, 1923. 4 pages. 5 cents.
829. Tuberculosis: Its predisposing causes. By F. C. Smith. April 23, 1923. 8 pages.
*832. The prevention of simple goiter. By O. P. Kimball. April 27, 1923. 11 pages. 5 cents.
840. The physical care of rural school children. By Taliaferro Clark. June 1, 1923. 12 pages.
*850. The National Health Council as an aid to organized health agencies. July 6, 1923. 8 pages. 5 cents.
856. Dengue fever: Etiology, epidemiology, transmission, etc. By C. Armstrong. August 3, 1923. 35 pages.
*864. Automobile cost in rural health work. Report on operation of automobiles in cooperative rural health work in Virginia. By H. McG. Robertson. August 31, 1923. 5 pages. 5 cents.
867. Application of partial correlation to a health problem. By Frank M. Phillips and Faye Hollis Roberts. September 14, 1923. 13 pages.

*869. Vaccination technique and certification: An experiment in making vaccination an insurance against delay as well as a protection against disease. By S. B. Grubbs. September 21, 1923. 6 pages. 5 cents.

*873. Health conditions among chemical workers with respect to earnings. By Frank M. Phillips, Ph. D., and Gertrude A. Sager, M. A. October 5, 1923. 4 pages. 5 cents.

*874. Pellagra prevention by diet among institutional inmates. By Joseph Goldberger, C. H. Waring, and W. F. Tanner. October 12, 1923. 10 pages. 5 cents.

877. Results in a three-year trachoma campaign begun in Knott County, Ky., in 1913, as shown by a survey made in the same locality 10 years later. By John McMullen. October 26, 1923. 6 pages.

878. The spleen rate of school boys in the Mississippi Delta. By K. F. Maxcy and C. P. Coogle. October 26, 1923. 8 pages.

882. Fundamentals of rural health work. By W. F. Draper. November 16, 1923. 8 pages.

884. Collection of morbidity data and other sanitary information by the United States Public Health Service. By Brock C. Hampton. November 30, 1923. 16 pages.

*890. The program for oral hygiene in the public schools of Minneapolis, Minn. By F. Denton White, D. D. S. December 21, 1923. 6 pages. 5 cents.

893. Methods of administering iodine for prophylaxis of endemic goiter. By Robert Olesen. January 11, 1924. 11 pages. 5 cents.

*895. A study of the treatment and prevention of pellagra. By Joseph Goldberger and W. F. Tanner. January 18, 1924. 21 pages. 5 cents.

*896. The importance of our knowledge of thyroid physiology in the control of thyroid diseases. By Taliaferro Clark. January 18, 1924. 4 pages. 5 cents.

901. Is the prophylactic use of diphtheria antitoxin justified? By James A. Doull and Roy P. Sandridge. February 15, 1924. 12 pages.

*905. Factors in the mental health of girls of foreign parentage. A study of 210 girls of foreign parentage who received advice and assistance from a social agency, 1919–1922. By Mary C. Jarrett. March 7, 1924. 26 pages. 5 cents.

906. Malta fever. Cattle suggested as a possible source of infection, following a seriological study of human serums. By Alice C. Evans. March 14 1924. 18 pages.

*907. The new Baldwin-Wood weight-height-age-tables as an index of nutrition. By Taliaferro Clark, Edgar Sydenstricker, and Selwyn D. Collins. March 14, 1924. 8 pages. 5 cents.

908. Absenteeism among white and negro school children in Cleveland, 1922-23. By G. E. Harmon and G. E. Whitman. March 21, 1924. 9 pages.

912. Some tendencies indicated by the new life tables. By Rollo H. Britten. April 11, 1924. 13 pages. 5 cents.

917. Factors in the mental health of boys of foreign parentage. A study of 240 boys of foreign parentage known to a child welfare agency 1916–1923. By Mary C. Jarrett. April 25, 1924. 21 pages.

*918. Relative efficiency of methods of sterilization of milk bottles at Pasteurization plants in Minnesota. By H. A. Whittaker, R. W. Archibald, and L. Shere. May 2, 1924. 8 pages. 5 cents.

924. The prevalence and trend of drug addiction in the United States and factors influencing it. By Lawrence Kolb and A. G. DuMez. May 23, 1924. 26 pages.

926. Health by radio. Vitamins. May 30, 1924. 5 pages.

928. Absenteeism because of sickness in certain schools in Cleveland, 1922–1923. By G. E. Harmon and G. E. Whitman. June 6, 1924. 8 pages.

931. The prevention and treatment of hay fever. By William Scheppegrell. June 20, 1924. 12 pages.

*933. Past incidence of certain communicable diseases common among children. Occurrence of measles, whooping cough, mumps, chicken pox, scarlet fever, and diphtheria, among school children in various localities in the United States. By Selwyn D. Collins. June 27, 1924. 16 pages. 5 cents.

*936. Effect of oil pollution of coast and other waters on the public health. By committee consisting of F. W. Lane, A. D. Bauer, H. F. Fisher, P. N. Harding July 11, 1924. 6 pages. 5 cents.

939. The legal aspects of milk control. By James A. Tobey. July 18, 1924. 8 pages.

940. Cancer and proprietary cures. July 18, 1924. 8 pages.

941. Thyroid survey of 47,493 elementary-school children in Cincinnati. By Robert Olesen. July 25, 1924. 26 pages.

942. A note on the relationship of tonsillectomy to the occurrence of scarlet fever and diphtheria. By James A. Doull. August 1, 1924. 8 pages.

945. Sanitary engineering courses of engineering colleges in the United States. By Isador W. Mendelsohn. August 15, 1924. 8 pages.

*947. The income cycle in the life of the wage earner. By Edgar Sydenstricker, Wilford I. King, and Dorothy Wiehl. August 22, 1924. 8 pages. 5 cents.

*948. Correspondence and reading courses in public health. August 22, 1924. 8 pages. 5 cents.

*950. Pellagra in relation to milk supply in the household. By G. A. Wheeler. August 29, 1924. 4 pages. 5 cents.

951. A plea for more attention to the nutrition of the school child. By Taliaferro Clark. August 29, 1924. 9 pages.

952. Protection of small water supplies used by railroads. By O. E. Brownell. September 5, 1924. 10 pages.

*954. Causes of absences in one grade of fifteen public schools in Washington, D. C. By Louise Tayler-Jones. September 12, 1924. 10 pages. 5 cents.

955. Thyroid enlargement among Montana school children. With notes on the possible influence of the place of residence and the use of vegetables and drinking water upon the condition. By Fred T. Foard. September 12, 1924. 5 pages.

956. Per capita medicinal requirements of narcotics. Data secured in a narcotic survey of Allegheny County, Md. By A. G. DuMez. September 12, 1924. 4 pages.

*957. Morbidity among school children in Hagerstown, Md. Cases of illness and days lost from school on account of illness among white school children during the school months December, 1921, to May, 1923, inclusive. By Selwyn D. Collins. September 19, 1924. 32 pages. 5 cents.

961. Developments in the field of mental testing. By Helen H. Dolan. October 3, 1924. 18 pages.

962. Mortality from malaria 1919–1923. By Kenneth F. Maxcy. October 10, 1924. 4 pages.

*963. Thyroid enlargement among Minnesota school children. Prevalence as shown by a survey of 4,061 children in 13 localities in 1923. By Robert Olesen and Taliaferro Clark. October 10, 1924. 14 pages. 5 cents.

965. Outbreak of scarlet fever caused by milk-borne infection. By Arthur Jordan. October 17, 1924. 7 pages.

966. Epidemiological study of the minor respiratory diseases by the Public Health Service. (Preliminary and progress report.) By J. G. Townsend. October 24, 1924. 12 pages.

975. The eyesight of the school child as determined by the Snellen test. A statistical study of the results of vision tests of 9,245 native white children in New York State, Delaware, South Carolina, and Frederick County, Md., and of 2,636 white children in Cecil County, Md. By Selwyn D. Collins. November 28, 1924. 15 pages.

978. A survey of public health nursing in the State departments of health. Compiled by Lucy Minnigerode. December 12, 1924. 27 pages.

979. Variation in eyesight at different ages, as determined by the Snellen test. A statistical study of the results of vision tests of 4,862 native white school boys and 6,479 male white industrial workers in the United States. By Selwyn D. Collins and Rollo H. Britten. December 19, 1924. 6 pages.

*980. Oil pollution at bathing beaches. Prepared by a committee consisting of F. W. Lane, A. D. Bauer, H. F. Fisher, and P. N. Harding. December 19, 1924. 14 pages. 5 cents.

983. Endemic goiter in Colorado. By Robert Olesen. January 2, 1926. 22 pages.

*984. A study of the pellagra-preventive action of dried beans, casein, dried milk, and brewers' yeast, with a consideration of the essential preventive factors involved. By Joseph Goldberger and W. F. Tanner. January 9, 1925. 27 pages. 5 cents.

991. The vaccum-cyanide method of delousing clothing and baggage. Experimental data upon which the procedure at the New York quarantine station is based. By H. E. Trimble. February 20, 1925. 21 pages.

*993. Incidence of sickness among white school children in Hagerstown, Md. Frequency of illness during the school year 1923–24, and a summary of the experience for 1921–1924. By Selwyn D. Collins. February 27, 1925. 14 pages. 5 cents.

995. Drainage ditches covered economically. Concrete pipe manufactured and laid cheaply in Emporia, Va. March 13, 1925. 8 pages.

999. Foot defectiveness in school children. March 27, 1925. 4 pages.

1003. Public Health Service publications. A list of publications issued during the period April, 1924, to March, 1925. April 10, 1925. 7 pages.

1008. Some effects of high environmental temperatures on the organism. By Frederick B. Flinn. May 1, 1925. 29 pages.

1013. Status of vaccination in American colleges. By Robert T. Legge. May 22, 1925. 5 pages.

1019. Canyon automobile camp, Yellowstone National Park. By Isador W. Mendelsohn. June 12, 1925. 12 pages.

1020. An outbreak of typhoid fever caused by milk-borne infection. By L. L. Lumsden. June 19, 1925. 15 pages.

1021. Tetanus in the United States following the use of bunion pads as a vaccination dressing. By Charles Armstrong. June 26, 1925. 6 pages.

1022. Studies of impounded waters in relation to malaria. By E. H. Gage. June 26, 1925. 19 pages.

*1029. Drinking-water standards. Standards adopted by the Treasury Department June 20, 1925, for drinking and culinary water supplied by common carriers in interstate commerce. April 10, 1925. 28 pages. 5 cents.

1031. Strabismus and defective color sense among school children. By Selwyn D. Collins. July 17, 1925. 9 pages.

*1046. Studies of impounded waters in relation to malaria. The trend of malaria in Horse Creek Valley, Aiken County, S. C. By E. H. Gage. October 16, 1925. 9 pages. 5 cents.

1049. A demonstration at Tarboro, N. C., of a system for sanitary control of milk supplies of towns and small cities. With special reference to operation of a municipal Pasteurization plant. By K. E. Miller. November 6, 1925. 12 pages.

*1050. Public health nursing. By J. G. Townsend. November 6, 1925. 8 pages. 5 cents.

1052. Water hyacinth and the breeding of Anopheles. By M. A. Barber and T. B. Hayne. November 20, 1925. 6 pages.

1053. Heredity and culture as factors in body build. By C. B. Davenport and Louise A. Nelson. November 27, 1925. 5 pages.

1054. Results of schick tests in California. By Frank L. Kelly, Ida May Stevens, and Margaret Beattie. December 4, 1925. 14 pages.

1058. Cancer mortality in the ten original registration States. Trend for the period 1900–1920. By J. W. Schereschewsky. January 1, 1926. 12 pages.

1059. Smallpox vaccination as carried out at Lehigh University. By Stanley Thomas. January 8, 1926. 8 pages.

1060. Sickness among industrial employees. Incidence and duration of disabilities from the important causes lasting longer than one week among 133,000 persons in industry in 1924, and a summary of the experience for 1920–1924. January 22, 1926. 19 pages.

1063. Stream Pollution. I. A review of the work of the United States Public Health Service in investigations of stream pollution. By W. H. Frost. January 15, 1926. II. The rate of deoxygenation of polluted waters. By Emery J. Theriault. February 5, 1926. III. The rate of atmospheric reaeration of sewage-polluted streams. By H. W. Streeter. February 12, 1926. IV. Quantitative studies of bacterial pollution and natural purification in the Ohio and the Illinois Rivers. By J. K. Hoskins. February 19, 1926. 51 pages.

*1065. A community health program. By Hugh S. Cumming. February 26, 1926. 10 pages. 5 cents.

1069. The relationship of endemic goiter to certain potential foci of infection. By Robert Olesen and Neil E. Taylor. March 26, 1926. 15 pages.

1070. Community responsibility of hospitals. By E. H. Lewinski-Corwin. April 2, 1926. 8 pages.

1071. The public health nurse. By J. G. Townsend. April 9, 1926. 12 pages.

1076. A comparison of full-time and part-time county health units in Kansas. By Earle G. Brown. April 23, 1926. 4 pages.

1078. The intensive treatment for hay fever. By William Scheppegrell. April 30, 1926. 4 pages.

1080. The leprosy problem in the United States. By O. E. Denney. May 14, 1926. 8 pages.

1081. Endemic goiter and intelligence. By Robert Olesen and Mabel R. Fernald. May 21, 1926. 16 pages.
1086. Results of Dick tests made on different groups. By R. E. Dyer, W. P. Caton, and B. T. Sockrider. June 11, 1926. 8 pages.
1094. The so-called action of acid sodium phosphate in delaying the onset of fatigue. By Frederick B. Flinn. July 16, 1926. 14 pages.
1096. Benzol poisoning as an industrial hazard. Review of studies conducted in cooperation with the subcommittee on benzol of the committee on industrial poisoning of the National Safety Council. By Leonard Greenburg. July 2, 9, 23, 1926. 63 pages.
1097. Report of the Committee on Uniform Standard Milk Ordnance, Conference of State and Territorial health officers, 1926. July 30, 1926. 10 pages.
1098. A national program for the unification of milk control. By Leslie C. Frank. July 30, 1926. 34 pages.
1099. United States Public Health Service standard milk ordnance, modified as adopted by the conference of State and Territorial health officers at Washington, D. C., May, 1926. July 30, 1926. 13 pages.
1102. Incidence of endemic thyroid enlargement in Connecticut. By Robert Olesen and Neil E. Taylor. August 13, 1926. 13 pages.
1108. Endemic goiter and physical development. I. Cincinnati school children by Robert Olesen and Neil E Taylor. September 3, 1926. 16 pages.
1109. The radioactivity of natural waters. By W. D. Collins. September 10, 1926. 4 pages.
1119. Endemic goiter and school absenteeism. By Robert Olesen and Neil E. Taylor. October 29, 1926. 10 pages.
1120. What the Government is doing for tuberculous persons. By Lucy Minnigerode. October 29, 1926. 8 pages.
1124. Organization of the health program of a university. By D. F. Smiley. November 19, 1926. 19 pages.
1125. Distribution of endemic goiter in the United States as shown by thyroid surveys. By Robert Olesen. November 26, 1926. 13 pages.
1127. Health studies of negro children. I. Intelligence studies of negro children in Atlanta, Ga. By Virginia Taylor Graham. December 3, 1926. 25 pages.
1128. The work of the United States Public Health Service. December 10, 1926. 28 pages.
1129. The control of communicable diseases. Report of the American Public Health Association committee on standard regulations appointed in October, 1916, revised by the committee in October, 1926. December 17, 1926. 35 pages.
1133. Epidemiological study of minor respiratory diseases. Progress report II: Based on records for families of medical officers of the Army, Navy, and Public Health Service and of members of several university faculties. By J. G. Townsend and Edgar Sydenstricker. January 14, 1927. 22 pages.
1134. The extent of medical and hospital service in a typical small city. By Edgar Sydenstricker. January 14, 1927. 11 pages.
1137. Questions and answers on smallpox and vaccination. By J. P. Leake. January 28, 1927. 19 pages.
1138. Some special features of the work of the Public Health Service. February 11, 1927. 77 pages.
1140. Paris green applied by airplane in the control of Anopheles production. By L. L. Williams, jr., and S. S. Cook. February 18, 1927. 5 pages.

1143. Further studies on the relationship of endemic goiter to certain potential foci of infection. II. In Connecticut. By Robert Olesen and Neil E. Taylor. March 4, 1927. 15 pages.

1144. Standard milk ordinance results in 14 Alabama towns. By Leslie C. Frank, S. W. Welch, and C. A. Abele. March 11, 1927. 11 pages.

1146. The problem of fetal and neonatal death. By Blanche Sterling. March 18, 1927. 35 pages.

1147. Examination of food handlers. By M. James Fine. March 25, 1927. 5 pages.

1148. Endemic thyroid enlargement in Massachusetts. By Robert Olesen and Neil E. Taylor. March 25, 1927. 14 pages.

1150. Review of literature on the physiological effects of abnormal temperatures and humidities. By R. R. Sayers and Sara J. Davenport. April 8, 1927. 63 pages.

1153. Preliminary report of screening studies in Leflore County, Miss. By C. P. Coogle. April 22, 1927. 12 pages.

1154. Definitions of Pasteurization and their enforcement. By Leslie C. Frank, Frederic J. Moss, and Peter E. LeFevre. April 29, 1927. 11 pages.

1156. A resumé, with comments, of the available literature relating to posture. By Louis Schwartz. May 6, 1927. 30 pages.

1157. A study of the pellagra-preventive action of the tomato, carrot, and rutabaga turnip. By Joseph Goldberger and G. A. Wheeler. May 13, 1927. 8 pages.

1158. Iodization of public water supplies for prevention of endemic goiter. By Robert Olesen. May 20, 1927. 13 pages.

1162. Drinking water coolers on common carriers. By Arthur P. Miller. June 10, 1927. 8 pages.

1163. The age curve of illness—Hagerstown morbidity studies No. IV. By Edgar Sydenstricker. June 10, 1927. 12 pages.

1165. Recent developments in sewage chlorination. By L. H. Enslow. June 17, 1927. 18 pages.

1167. A comparison of the incidence of illness and death—Hagerstown morbidity studies No. V. By Edgar Sydenstricker. June 24, 1927. 13 pages.

1169. The Public Health Service nursing corps. By Lucy Minnigerode. July 8, 1927. 4 pages.

1172. The illness rate among males and females. Hagerstown morbidity studies No. VI. By Edgar Sydenstricker. July 29, 1927. 19 pages.

1174. Pellagra: Its nature and prevention. By Joseph Goldberger. September 2, 1927. 8 pages.

1175. Dietetics in institutions and in the field. By Lucy Minnigerode. August 19, 1927. 5 pages.

1180. Mosquito control by airplane. Memorandum on the distribution of Paris green by airplane in the control of Anopheles production in uncleared pond near Bamberg, S. C., September 8, 1927. September 23, 1927. 2 pages.

1181. A study of the pellagra-preventive action of the cowpea (*Vigna sinensis*) and of commercial wheat germ. By Joseph Goldberger and G. A. Wheeler. September 30, 1927. 8 pages.

1182. The diagnosis of poliomyelitis. By J. P. Leake. October 7, 1927. 12 pages.

1187. Pellagra in the Mississippi flood area. Report of an inquiry relating to the prevalence of pellagra in the area affected by the overflow of the Mississippi and its tributaries in Tennessee, Arkansas, Mississippi, and Louisiana in the spring of 1927. By Joseph Goldberger and Edgar Sydenstricker. November 4, 1927. 20 pages.

Miscellaneous Publications

*17. Prevention of disease and care of the sick. 3d edition. By W. G. Stimpson. First Aid to the Injured. By M. H. Foster. 1925. 318 pages. Paper bound, 75 cents; cloth bound, $1.

27. Tuberculosis: Its nature and prevention. By F. C. Smith. 1921. 12 pages; 1 plate. (Reprint of Public Health Bulletin No. 36.)

28. Getting well: Some things worth knowing about tuberculosis. By medical officers of the Public Health Service, private specialists, and patients. Edited and arranged by Nathan Barlow. 1922. (Revised in 1926.) 24 pages.

Posters

1. The House Fly.

4. Influenza.

Venereal-Disease Publications

BULLETINS

6. Manpower. A pamphlet for men, giving the facts of venereal disease and some material on sex hygiene.

7. The problem of sex education in schools. For educators.

39. Venereal-disease ordinances.

43. The public health nurse and venereal-disease control.

47. The percentage of venereal diseases among approximately the second million drafted men—by cities.

54. The case against the red-light district.

55. Keeping fit. For older boys. Tells how to keep in prime physical condition and includes essential information regarding sex hygiene.

59. The wonderful story of life. A pamphlet for parents to read to little children.

60. Healthy, happy womanhood. A pamphlet which sets forth in simple language facts regarding sex and venereal diseases essential to the welfare of girls and young women.

61. Sex education in the home. For parents.

62. Outdoing the ostrich. Sets forth the threefold plan for combating venereal disease.

63. The facts about venereal diseases. For men. Contains in condensed form much of the information in "Manpower."

64. A square deal for the boy in industry. For those engaged in work with boys. Outlines a method of reaching employed boys with the "Keeping Fit" exhibit.

67. Syphilis and gonorrhea: Diseases of youth.

70. Dividends from venereal-disease control.

73. Placard—Warning against venereal diseases. (For use by railroads, industrial plants, etc.).

74. The need for sex education. Includes lists of carefully selected books. 1 page.

*75. High schools and sex education. A manual for teachers, setting forth the nature of sex education and describing the courses into which a limited amount of sex information may be introduced when well-qualified teachers are available. 98 pages (buckram). 50 cents.

80. Health maintenance. Subject: The relief and prevention of venereal diseases. Facts concerning venereal diseases and their prevention. Leaflet. For adults.
*81. Venereal disease manual for social and corrective agencies. Treats of the venereal diseases and their sequelae and the relation of the various sociologic and economic factors to these diseases. 70 pages (buckram). 50 cents.
83. You and your boy. Leaflet. For parents.
84. Catalogue of educational materials. Contains a list of all the educational material including publications, motion pictures, exhibits, and strip films concerning venereal diseases, available from the United States Public Health Service.
85. Where Away? Written especially for the use of merchant seamen and other beneficiaries of the United States Public Health Service.
86. Sex education—A symposium for educators. Outlines the field of sex education and methods for its introduction in school curricula. 58 pages.

REPRINTS FROM PUBLIC HEALTH REPORTS

354. Syphilis. By L. L. Williams. August 4, 1916. 13 pages.
378. Prevalence of syphilis as indicated by the routine use of the Wassermann reaction. By William M. Bryan and James F. Hooker. November 24, 1916. 2 pages.
447. The control of venereal diseases. January 4, 1918. 3 pages.
450. Venereal-disease legislation, showing the trend. January 18, 1918. 30 pages.
455. A State-wide plan for the prevention of venereal diseases. By Allan J. McLaughlin. February 22, 1918. 16 pages.
459. Suggestions for State board of health regulations for the prevention of venereal diseases. Approved by Surgeon General of the Army, Surgeon General of the Navy, and Surgeon General of the Public Health Service. March 29, 1918. 7 pages.
468. Progress in venereal-disease control. By J. G. Wilson. May 24, 1918. 6 pages.
474. State and Federal cooperation in combating the venereal diseases. By J. G. Wilson. June 28, 1918. 6 pages.
477. Venereal-disease control. Standards for discharge of carriers. July 19, 1918. 4 pages.
485. Regulations for allotment of funds for venereal-disease prevention work. September 13, 1918. 4 pages.
515. The place of "early treatment" in the program of venereal-disease control, April 18, 1919. 2 pages.
524. Public Health Service program for nation-wide control of venereal diseases. By C. C. Pierce. May 16, 1919. 8 pages.
542. Antivenereal disease and sex hygiene program for the colored population. By Roscoe C. Brown. July 18, 1919. 7 pages.
561. Venereal-disease control activities. By C. V. Herdliska. October 10, 1919. 6 pages.
609. Some possibilities in the statistical analysis of case reports of venereal diseases. By C. C. Pierce and E. Sydenstricker. August 27, 1920. 10 pages.
630. Venereal-disease incidence at different ages. Tabulation of 8,413 case reports. By Mary L. King and Edgar Sydenstricker. December 24, 1920. 18 pages.
637. Syphilis as a cause of insanity. By Elise Donaldson. January 21, 1921. 8 pages.

685. All-America conference on venereal diseases. Proceedings and resolutions. By Charles Bolduan. July 15, 1921. 44 pages.
693. Control of venereally diseased persons in interstate Commerce. By David Robinson. September 9, 1921. 8 pages.
695. Value of certain inquiries on venereal-disease case reports—a study of 8,413 case reports in Indiana. September 16, 1921. 15 pages.
696. Syphilis and infant deaths. By Millard Knowlton. September 23, 1921. 10 pages.
718. Program for statistics of venereal diseases. By L. I. Dublin and M. A. Clark. December 16, 1921. 20 pages.
720. Mortality from syphilis. 1,183 autopsies in New York. December 30, 1921. 8 pages.
765. The public health institutes, 1922. June 30, 1922. 4 pages.
787. Venereal-disease social service in Plainfield, N. J. By A. J. Casselman. September 22, 1922. 10 pages.
794. An analysis of 10,000 New Jersey reports of gonorrhea and syphilis. By A. J. Casselman. October 27, 1922. 4 pages.
847. Incidence of venereal diseases among American seamen in the Orient. By M. R. King. June 29, 1923. 4 pages.

CARD EXHIBITS

Adolescence and sex education—34 cards, 9 by 12 inches. For teachers. This exhibit is not for sale, but may be borrowed from many of the State departments of health and from the United States Public Health Service.

*The venereal disease menace—50 cards, 9 by 12 inches. For adults. May be purchased from the Superintendent of Documents, Washington, D. C. $1.

PERIODICAL PUBLICATION

*Venereal Disease Information—A monthly publication. Presents the medical aspects of venereal-disease control work. 5 cents per copy. Subscription price, 50 cents per year.

DEATHS DURING WEEK ENDED NOVEMBER 19, 1927

Summary of information received by telegraph from industrial insurance companies for week ended November 19, 1927, and corresponding week of 1926. (From the Weekly Health Index November 23, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Nov. 19, 1927	Corresponding week 1926
Policies in force	69, 548, 945	66, 011, 115
Number of deaths claims	13, 622	12, 939
Deaths claims per 1,000 policies in force, annual rate	10. 2	10. 2

Deaths from all causes in certain large cities of the United States during the week ended November 19, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, November 23, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Nov. 19, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate week ended Nov. 19, 1927 [2]
	Total deaths	Death rate [1]		Week ended Nov. 19, 1927	Corresponding week 1926	
Total (67 cities)	6,966	12.3	[3] 12.6	672	[3] 741	[4] 54
Albany [5]	37	16.1	14.5	1	4	21
Atlanta	83			7	6	
White	42			4	5	
Colored	41	(6)		3	1	
Baltimore [5]	245	15.6	14.5	20	15	63
White	178		13.2	12	10	48
Colored	67	(6)	22.3	8	5	125
Birmingham	61	14.8	13.9	10	12	
White	32		11.4	7	6	
Colored	29	(6)	17.7	3	6	
Boston	226	14.0	14.4	32	25	89
Bridgeport	30			9	2	154
Buffalo	156	14.8	14.1	13	27	55
Cambridge	26	10.9	10.3	4	0	71
Camden	36	14.1	16.7	1	5	17
Canton	11	5.1	6.6	0	4	0
Chicago [5]	679	11.4	11.1	57	59	50
Cincinnati	156	19.7	17.0	15	12	91
Cleveland	164	8.7	10.1	15	18	40
Columbus	66	11.8	12.6	6	9	56
Dallas	46	11.5	15.7	11	9	
White	38		12.7	10	5	
Colored	8	(6)	35.2	1	4	
Dayton	45	13.0	11.5	5	5	83
Denver	66	11.9	15.0	9	8	
Des Moines	24	8.4	11.1	1	3	18
Detroit	235	9.2	10.5	27	35	41
Duluth	14	6.3	13.4	1	3	22
El Paso	29	13.3	14.3	5	8	
Erie	18			3	4	64
Fall River [5]	28	11.0	12.7	2	1	34
Flint	15	5.5	9.2	4	2	63
Fort Worth	26	8.3	8.5	2	4	
White	22		8.9	2	3	
Colored	4	(6)	5.4	0	1	
Grand Rapids	23	7.5	10.7	1	2	15
Houston	51			6	4	
White	31			3	4	
Colored	20	(6)		3	0	
Indianapolis	115	16.0	13.9	10	12	76
White	99		14.0	9	8	78
Colored	16	(6)	13.2	1	4	60
Jersey City	76	12.3	10.5	8	4	60
Kansas City, Kans	20	8.9	17.4	4	4	84
White	15		16.8	2	3	49
Colored	5	(6)	20.3	2	1	290
Kansas City, Mo	102	13.9	14.3	12	11	
Knoxville	15	7.7		4		
White	9			3		
Colored	6	(6)		1		
Los Angeles	228			14	15	40
Louisville	58	9.5	14.1	8	5	67
White	46		13.7	5	4	49
Colored	12	(6)	16.5	3	1	206
Lowell	28	13.2	13.2	10	3	211
Lynn	17	8.4	7.5	2	6	55
Memphis	61	17.8	20.1	5	6	
White	30		12.9	1	3	
Colored	31	(6)	33.1	4	3	
Milwaukee	99	9.7	11.6	12	12	55
Minneapolis	122	14.4	11.7	12	6	68
Nashville	53	20.0	24.0	4	5	
White	31		18.1	2	3	
Colored	22	(6)	38.8	2	2	
New Bedford	18	7.9	13.5	1	3	19
New Haven	24	6.8	9.2	4	6	56

Footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended November 19, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926—Continued.

City	Week ended Nov. 19, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate week ended Nov. 19, 1927 [2]
	Total deaths	Death rate [1]		Week ended Nov. 19, 1927	Corresponding week 1926	
New Orleans	127	15.6	18.5	16	18	----------
White	78	----------	15.3	6	10	----------
Colored	49	(6)	27.7	10	8	----------
New York	1,376	12.0	12.2	115	138	48
Bronx Borough	171	9.6	9.8	16	14	51
Brooklyn Borough	473	10.8	10.9	40	54	42
Manhattan Borough	572	16.4	15.7	49	61	59
Queens Borough	130	8.4	9.5	9	7	39
Richmond Borough	30	10.6	15.4	1	2	19
Newark, N. J	109	12.2	10.6	16	11	80
Oakland	67	13.1	12.2	5	6	59
Oklahoma City	23	----------	----------	0	7	----------
Omaha	47	11.2	13.8	9	3	102
Paterson	26	9.4	13.1	2	3	36
Philadelphia	563	14.4	13.8	57	52	77
Pittsburgh	213	17.3	12.9	13	24	45
Portland, Oreg	76	----------	----------	3	4	32
Providence	51	9.5	11.0	5	5	43
Richmond	52	14.1	15.2	6	8	78
White	31	----------	12.9	4	4	81
Colored	21	(6)	20.7	2	4	73
Rochester	65	10.5	10.2	5	6	42
St. Louis	210	13.1	15.0	19	26	----------
St. Paul	52	10.8	10.5	7	5	64
Salt Lake City [5]	26	10.0	14.1	1	1	16
San Antonio	62	15.3	14.5	11	11	----------
San Diego	48	21.8	13.2	4	0	88
San Francisco	118	10.7	10.9	2	8	12
Schenectady	25	14.0	7.3	1	3	30
Seattle	81	----------	----------	1	2	11
Somerville	14	7.2	9.3	2	2	58
Spokane	28	13.4	18.2	2	4	48
Springfield, Mass	30	10.6	12.9	2	3	32
Syracuse	42	11.1	15.7	3	7	39
Toledo	50	8.6	11.7	2	6	19
Trenton	54	20.6	19.8	0	9	0
Utica	23	11.6	13.2	2	1	47
Washington, D. C	138	13.3	14.0	10	15	58
White	82	----------	12.0	7	9	60
Colored	56	(6)	19.9	3	6	55
Waterbury	17	----------	----------	2	5	47
Wilmington, Del	35	14.5	9.2	5	2	124
Worcester	38	10.2	10.0	6	4	73
Yonkers	27	11.8	10.8	3	2	69
Youngstown	28	8.6	8.2	3	5	40

1 Annual rate per 1,000 population.
2 Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
3 Data for 66 cities.
4 Data for 61 cities.
5 Deaths for week ended Friday Nov. 18, 1927.
6 In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks Ended November 27, 1926, and November 26, 1927

Cases of certain communicable diseases reported by telegraph by State health o. for the weeks ended November 27, 1926, and November 26, 1927

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Nov. 27, 1926	Week ended Nov. 26, 1927	Week ended Nov. 27, 1926	Week ended Nov. 26, 1927	Week ended Nov. 27, 1926	Week ended Nov. 26, 1927	Week ended Nov. 27, 1926	Week ended Nov. 26, 1927
New England States:								
Maine	1	3	2	0	105	104	0	0
Vermont	2	1	-------	0	116	0	0	0
Massachusetts	87	115	9	5	51	296	1	0
Rhode Island	11	13	1	1	-------	5	0	0
Connecticut	25	28	2	8	32	36	0	0
Middle Atlantic States:								
New York	281	325	[1] 52	[1] 12	670	133	6	5
New Jersey	140	169	11	10	26	63	1	4
Pennsylvania	224	268	-------	-------	504	444	0	1
East North Central States:								
Ohio	-------	291	-------	7	-------	46	-------	-------
Indiana	83	47	21	21	47	14	0	0
Illinois	129	176	24	11	480	32	3	10
Michigan	125	102	-------	2	68	168	0	2
Wisconsin	74	40	11	44	489	85	2	9
West North Central States:								
Minnesota	87	33	-------	1	91	5	0	0
Iowa [2]	32	-------	-------	-------	9	-------	1	-------
Missouri	46	100	23	6	52	37	0	1
North Dakota	6	-------	-------	-------	163	-------	0	-------
South Dakota	0	3	1	1	29	9	0	0
Nebraska	6	16	1	-------	3	20	0	1
Kansas	18	34	9	2	154	17	2	1
South Atlantic States:								
Delaware	0	2	0	2	0	4	0	0
Maryland [2]	49	-------	17	-------	21	-------	1	-------
District of Columbia	19	-------	0	-------	2	-------	0	-------
Virginia	-------	-------	-------	-------	-------	-------	-------	-------
West Virginia	75	80	29	31	35	20	0	0
North Carolina	122	91	-------	-------	9	642	1	1
South Carolina	76	60	642	578	8	261	0	0
Georgia	58	21	50	94	6	27	0	0
Florida	59	22	1	1	5	2	0	1
East South Central States:								
Tennessee	86	42	51	37	16	102	0	0
Alabama	72	104	66	67	10	40	2	0
Mississippi	30	42	-------	-------	-------	-------	0	0
West South Central States:								
Arkansas	7	81	68	88	3	6	0	1
Louisiana	43	45	12	10	20	17	0	2
Oklahoma [3]	68	82	150	36	27	26	1	1
Texas	62	92	7	52	1	23	0	0
Mountain States:								
Montana	2	5	-------	-------	172	1	0	0
Idaho	3	2	-------	-------	27	1	0	0
Wyoming	1	3	-------	-------	8	11	1	0
Colorado	7	80	2	-------	5	17	0	1
New Mexico	1	9	-------	-------	3	14	0	0
Arizona	4	16	-------	-------	10	1	0	0
Utah [2]	9	13	-------	3	308	1	0	0
Pacific States:								
Washington	85	22	-------	-------	70	77	0	4
Oregon	14	7	17	17	19	4	1	0
California	199	117	18	21	552	37	2	0

[1] New York City only. [2] Week ended Friday. [3] Exclusive of Tulsa.

Cases of certain communicable diseases reported by telegraph by State health officers for the weeks ended November 27, 1926, and November 26, 1927—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Nov. 27, 1926	Week ended Nov. 26, 1927	Week ended Nov. 27, 1926	Week ended Nov. 26, 1927	Week ended Nov. 27, 1926	Week ended Nov. 26, 1927	Week ended Nov. 27, 1926	Week ended Nov. 26, 1927
New England States:								
Maine	0	6	47	40	0	0	2	5
Vermont	0	0	2	8	0	0	0	0
Massachusetts	3	19	289	170	0	0	6	7
Rhode Island	0	1	21	17	0	0	0	2
Connecticut	0	1	44	36	0	0	1	3
Middle Atlantic States:								
New York	9	12	295	273	3	8	41	36
New Jersey	1	8	105	114	0	0	16	6
Pennsylvania	2	10	348	350	0	0	46	20
East North Central States:								
Ohio		29		209		5		7
Indiana	0	2	117	118	143	93	16	3
Illinois	3	4	234	233	3	17	41	19
Michigan	0	2	204	156	9	12	5	13
Wisconsin	2	7	121	114	5	23	4	1
West North Central States.								
Minnesota	0	1	216	134	9	3	3	3
Iowa [1]	0		51		3		1	
Missouri	0	2	147	81	3	88	14	12
North Dakota	1		76		13		0	
South Dakota	0	1	36	26	3	2	4	2
Nebraska	1	8	27	42	17	5	43	3
Kansas	1	3	91	117	12	32	6	7
South Atlantic States:								
Delaware	0	1	10	3	0	0	1	0
Maryland [1]	0		43		0		22	
District of Columbia	0		12		0		2	
Virginia	2				0			
West Virginia	1	9	52	47	1	5	28	24
North Carolina	0	0	84	71	42	28	6	8
South Carolina	0	1	20	38	15	5	27	33
Georgia	0	0	12	17	16	0	15	9
Florida	0	0	15	7	14	0	5	1
East South Central States:								
Tennessee	0	1	58	50	6	7	25	18
Alabama	0	0	25	20	7	19	24	43
Mississippi	0	0	18	30	6	7	3	5
West South Central States:								
Arkansas	0	2	21	10	1	2	16	14
Louisiana	1	0	18	18	9	8	12	12
Oklahoma [2]	2	3	28	25	1	36	37	43
Texas	0	2	37	66	1	13	2	14
Mountain States:								
Montana	1	2	113	12	3	59	1	2
Idaho	0	2	36	17	3	8	0	0
Wyoming	0	0	22	33	5	10	0	0
Colorado	0	0	68	52	20	8	4	11
New Mexico	0	2	11	9	0	0	1	16
Arizona	0	0	21	0	0	0	1	0
Utah [1]	0	2	19	2	5	30	2	2
Pacific States.								
Washington	1	9	82	39	20	35	6	5
Oregon	0	26	59	9	15	20	3	3
California	2	17	238	155	9	5	10	7

[1] Week ended Friday.
[2] Exclusive of Tulsa.

Reports for Week Ended November 19, 1927

DIPHTHERIA	Cases
District of Columbia	18
North Dakota	3
INFLUENZA	
District of Columbia	3
MEASLES	
District of Columbia	1
North Dakota	11

POLIOMYELITIS	Cases
North Dakota	1
SCARLET FEVER	
District of Columbia	23
North Dakota	46
SMALLPOX	
District of Columbia	1
North Dakota	12
TYPHOID FEVER	
District of Columbia	2

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
October, 1927										
Alabama	2	551	88	615	89	57	3	133	9	138
Georgia	0	240	181	510	55	41	2	151	18	138
Illinois	23	587	59	18	99	5	128	677	39	163
Iowa	4	59			12		36	148	84	14
Louisiana	2	163	24	660	15	32	6	43	18	68
Minnesota	9	250	8	1	17		40	396	5	30
New York	0	292		19	422		84	468	18	124
Ohio	8	779	54	7	113		272	842	50	159
Rhode Island	2	61	5		11		19	94	4	6
Tennessee	1	289	150	591	232	77	21	292	35	362
Vermont	0	14			16		16	53	0	4
West Virginia	2	125	31		37		72	344	22	205
Wyoming	0	12	8		45		6	54	2	9

October, 1927

	Cases
Actinomycosis:	
Illinois	1
Anthrax:	
Louisiana	1
New York	4
Tennessee	1
Chicken pox:	
Alabama	25
Georgia	17
Illinois	563
Iowa	76
Louisiana	9
Minnesota	291
New York	865
Ohio	646
Rhode Island	10
Tennessee	31
Vermont	117
West Virginia	86
Wyoming	31
Conjunctivitis:	
Georgia	1
Dengue:	
Alabama	5
Georgia	1
Dysentery:	
Georgia	25
Illinois	37
Louisiana	6
New York	15
Ohio	1
Tennessee	17
German measles:	
Illinois	14
New York	28
Ohio	22
Rhode Island	1
Hookworm disease:	
Georgia	20
Louisiana	4
Impetigo contagiosa:	
Iowa	1

October, 1927—Continued

	Cases
Lead poisoning:	
Illinois	26
Ohio	19
Leprosy:	
Illinois	1
Minnesota	1
Lethargic encephalitis:	
Alabama	1
Illinois	3
Iowa	1
Louisiana	1
Minnesota	3
New York	6
Ohio	5
Rhode Island	1
Malta fever:	
Iowa	1
Minnesota	1
Mumps:	
Alabama	29
Georgia	24
Illinois	279
Iowa	40
Louisiana	4
New York	596
Ohio	232
Rhode Island	15
Tennessee	27
Vermont	43
Wyoming	8
Ophthalmia neonatorum:	
Illinois	46
New York	4
Ohio	105
Rhode Island	3
Paratyphoid fever:	
Georgia	8
Illinois	2
Louisiana	2
Ohio	2
Tennessee	5

October, 1927—Continued

	Cases
Puerperal septicemia:	
Illinois	8
New York	8
Rabies in animals:	
New York	7
Rabies in man:	
Illinois	2
Louisiana	1
Ohio	1
Scabies:	
Iowa	1
Septic sore throat:	
Georgia	42
Illinois	8
New York	6
Ohio	71
Rhode Island	1
Tennessee	5
Tetanus:	
Georgia	1
Illinois	2
Louisiana	5
New York	6
Trachoma:	
Illinois	3
Louisiana	2
Minnesota	1

October, 1927—Continued

	Cases
Trachoma—Continued.	
New York	2
Ohio	6
Wyoming	1
Tularaemia:	
Minnesota	1
Typhus fever:	
Alabama	7
Georgia	8
Vincent's angina:	
Illinois	1
Iowa	1
New York	95
Whooping cough:	
Alabama	119
Georgia	34
Illinois	694
Iowa	34
Louisiana	4
Minnesota	83
New York	1,062
Ohio	375
Rhode Island	5
Tennessee	193
Vermont	103
West Virginia	188
Wyoming	47

RECIPROCAL NOTIFICATIONS

Notifications regarding communicable diseases sent during the month of October, 1927, to other State health departments by departments of health of certain States

Referred by—	California	Connecticut	Illinois	Massachusetts	Minnesota	New York
Encephalitis					1	
Leprosy					1	
Malaria [1]					1	
Measles						1
Poliomyelitis	4	1	2			4
Scarlet fever			1			4
Smallpox					1	
Trachoma					1	
Tularaemia	1					
Tuberculosis		1	3		54	
Typhoid	2		2	3	6	[2] 2

[1] Tertian.
[2] Two carriers in addition.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 97 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 29,800,000. The estimated population of the 94 cities reporting deaths is more than 29,650,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended November 12, 1927, and November 13, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
42 States	2,396	2,718	----------
97 cities	1,174	1,266	1,241
Measles			
41 States	2,197	3,547	----------
97 cities	395	528	----------
Poliomyelitis			
43 States	294	52	----------
Scarlet fever			
42 States	2,904	3,776	----------
97 cities	841	1,170	870
Smallpox			
42 States	423	379	----------
97 cities	93	31	28
Typhoid fever:			
42 States	563	756	----------
97 cities	87	114	82
Deaths reported			
Influenza and pneumonia			
94 cities	627	666	----------
Smallpox			
94 Cities	1	0	----------
Houston	1	0	----------

City reports for week ended November 12, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years It is in most instances the median number of cases reported in the corresponding week of the preceding years When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during non-epidemic years

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine.									
Portland	75,333	2	2	1	0	0	0	0	2
New Hampshire:									
Concord	22,546	0	0	0	0	0	6	0	1
Manchester	83,097	0	3	0	0	0	0	0	1
Vermont:									
Barre	10,008	4	0	0	0	0	0	0	0
Massachusetts:									
Boston	779,620	49	48	32	5	0	116	8	21
Fall River	128,993	2	4	3	1	1	1	1	5
Springfield	142,065	11	3	1	0	0	2	5	0
Worcester	190,757	19	6	8	0	0	5	14	1
Rhode Island									
Pawtucket	69,760	0	1	1	0	0	0	0	1
Providence	267,918	0	9	15	0	0	1	1	3
Connecticut									
Bridgeport	(1)	0	10	6	0	0	0	0	1
Hartford	160,197	4	8	0	1	0	0	1	1
New Haven	178,927	4	3	2	0	0	16	12	5

[1] No estimate made.

City reports for week ended November 12, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	51	19	28		0	27	19	9
New York	5,873,356	81	160	230	13	6	25	16	126
Rochester	316,786	6	10	4		0	1	1	4
Syracuse	182,003	14	12	0		0	12	3	0
New Jersey:									
Camden	128,642	3	8	10		0	0	1	1
Newark	452,513	27	11	17	7	0	13	11	9
Trenton	132,020	0	4	2	1	1	3	0	2
Pennsylvania:									
Philadelphia	1,979,364	52	78	36		6	1	51	57
Pittsburgh	631,563		35						
Reading	112,707	16	4	9		0	1	1	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	6	17	13	0	4	0	2	14
Cleveland	936,485	38	54	121	4	1	7	38	13
Columbus	279,836	4	12	25	0	0	0	1	6
Toledo	287,380	27	17	3	0	0	11	3	0
Indiana:									
Fort Wayne	97,846	1	4	10	0	0	0	0	1
Indianapolis	358,819	26	11	11	0	0	0	13	9
South Bend	80,091	3	3	2	0	0	0	0	6
Terre Haute	71,071	0	3	3	0	0	0	0	0
Illinois:									
Chicago	2,995,239	108	123	119	4	2	4	27	49
Springfield	63,923	1	3	0	0	0	0	2	2
Michigan:									
Detroit	1,245,824	26	83	63	2	1	20	16	23
Flint	130,316	12	14	3	0	0	1	10	0
Grand Rapids	153,698	7	6	1	0	0	6	2	2
Wisconsin:									
Kenosha	50,891	16	3	0	0	0	0	2	1
Milwaukee	509,192	76	32	8	0	0	2	16	5
Racine	67,707	3	2	0	0	0	0	1	3
Superior	39,671	2	1	1	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	2	3	0	0	0	0	0	2
Minneapolis	425,435	61	35	15	0	1	2	2	4
St. Paul	246,001	33	19	9	0	0	1	34	8
Iowa:									
Davenport	52,469	0	2	2	0		0	0	
Des Moines	141,441	1	7	0	0		0	0	
Sioux City	76,411	6	3	0	0		0	17	
Waterloo	36,771	6	0	2	0		2	0	
Missouri:									
Kansas City	367,481	24	13	7	0	0	2	22	2
St. Joseph	78,342	4	3	1	0	0	0	0	5
St. Louis	821,543	9	51	39	0	0	1	2	
North Dakota:									
Fargo	26,403	29	0	0	0	0	0	0	0
Grand Forks	14,811	21	0	0	0		0	6	
South Dakota:									
Aberdeen	15,036	1	0	0	0		0	0	
Sioux Falls	30,127	0	0	0	0		0	0	
Nebraska:									
Lincoln	60,941	15	3	4	0	0	3	14	0
Omaha	211,768	15	10	3	0	0	0	1	7
Kansas:									
Topeka	55,411	6	8	3	1	0	0	6	5
Wichita	88,367	6	8	2	0	0	0	6	3
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	0	3	1	0	0	0	0	3
Maryland:									
Baltimore	796,296	39	36	31	10	0	20	13	24
Cumberland	33,741	0	1	0	1	1	0	0	0
Frederick	12,035	0	1	0	0	0	0	0	0

City reports for week ended November 19, 1927—Continued

Division, State, and city	Population July 1, 1926, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
SOUTH ATLANTIC—con.									
District of Columbia:									
Washington	497,906	3	22	12	0	0	2	0	10
Virginia.									
Lynchburg	30,395	5	3	3	0	0	0	0	0
Norfolk	(1)	7	5	5	0	0	1	0	1
Richmond	186,403	3	23	13	0	0	3	1	3
Roanoke	58,208	2	6	2	0	2	7	1	0
West Virginia.									
Charleston	49,019	1	4	0	0	0	1	0	1
Wheeling	56,208	25	4	1	0	0	0	0	3
North Carolina.									
Raleigh	30,371	18	3	2	0	0	0	0	0
Wilmington	37,061	0	1	1	0	0	15	0	2
Winston-Salem	69,031	0	4	9	0	1	5	1	2
South Carolina:									
Charleston	73,125	0	2	2	33	2	0	0	6
Columbia	41,225	2	1	1	0		6	5	2
Greenville	27,311	0	1	3	0	0	3	18	0
Georgia:									
Atlanta	(1)	1	11	11	21	2	0	0	4
Brunswick	16,809	0	0	1	0	0	0	1	0
Savannah	93,134	0	3	6	2	1	11	1	5
Florida:									
Miami	69,754	1		1	2	0	0	0	1
St. Petersburg	26,847		0			0			0
Tampa	94,743	0	2	1	0	0	1	1	1
EAST SOUTH CENTRAL									
Kentucky									
Covington	58,309	0	3	0	0	0	0	0	1
Lexington	46,895	0	4	0	0	0	0	0	3
Louisville	305,935	6	10	2	2	0	1	0	11
Tennessee:									
Memphis	174,533	2	14	2	0	1	14	0	3
Nashville	136,220	0	7	3	0	0	0	0	2
Alabama:									
Birmingham	205,670	4	7	28	7	1	0	0	9
Mobile	65,955	0	2	0	3	1	0	0	1
Montgomery	46,481	0	2	6	0	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas									
Fort Smith	31,643		1						
Little Rock	74,216	0	3	1	1	0	1	0	0
Louisiana:									
New Orleans	414,493	0	12	15	7	3	0	0	11
Shreveport	57,857	2	1	3	0	0	1	0	4
Oklahoma									
Tulsa	124,478	5	7	1	0		0	5	
Texas									
Dallas	194,450	6	15	27	1	1	0	1	5
Galveston	48,375	0	0	0	0	0	0	0	2
Houston	164,954	0	6	4	0	0	0	0	3
San Antonio	198,069	0	4	16	0	0	1	0	5
MOUNTAIN									
Montana:									
Billings	17,971	0	0	0	0	0	0	0	0
Great Falls	29,883	0	1	0	0	0	0	0	0
Helena	12,037	3	0	0	0	0	0	0	0
Missoula	12,668	0	0	0	0	0	0	0	0
Idaho									
Boise	23,042	0	0	0	0	0	1	6	0
Colorado.									
Denver	280,911	23	15	16		1	0	7	9
Pueblo	43,787	3	4	1	0	1	1	3	0
New Mexico:									
Albuquerque	21,000	3	0	0	0	0	0	1	2
Utah.									
Salt Lake City	130,948	14	4	14	0	0	0	0	5
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	2

[1] No estimate made.

City reports for week ended November 12, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
PACIFIC									
Washington:									
Seattle	(1)	-------	7	-------	-------	-------	-------	-------	-------
Spokane	108,897	-------	4	-------	-------	-------	-------	-------	-------
Tacoma	104,455	0	4	3	0	0	3	0	1
Oregon:									
Portland	282,383	8	11	6	0	0	4	0	0
California:									
Los Angeles	(1)	14	49	42	4	0	3	5	19
Sacramento	72,260	7	3	3	0	0	2	0	1
San Francisco	557,530	54	18	17	0	0	14	4	8

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	2	1	0	0	0	2	0	0	0	1	21
New Hampshire:											
Concord	1	0	0	0	0	0	0	0	0	0	10
Manchester	1	1	0	0	0	0	0	0	0	0	19
Vermont:											
Barre	0	0	0	0	0	2	0	0	0	0	3
Massachusetts:											
Boston	42	52	0	0	0	12	2	5	0	18	207
Fall River	2	3	0	0	0	2	1	0	0	0	26
Springfield	5	6	0	0	0	3	0	0	0	0	25
Worcester	9	5	0	0	0	2	0	0	0	3	42
Rhode Island:											
Pawtucket	1	1	0	0	0	0	0	0	0	0	20
Providence	6	11	0	0	0	5	0	1	0	0	64
Connecticut:											
Bridgeport	7	2	0	0	0	0	0	0	0	0	30
Hartford	5	6	0	0	0	1	0	0	0	4	28
New Haven	6	1	0	0	0	0	0	1	0	3	27
MIDDLE ATLANTIC											
New York:											
Buffalo	16	19	0	0	0	10	1	0	0	12	149
New York	99	86	0	0	0	[2] 96	19	17	1	129	1,284
Rochester	6	6	0	0	0	4	1	2	0	2	65
Syracuse	9	8	0	0	0	3	0	1	0	2	40
New Jersey:											
Camden	4	0	0	0	0	4	1	0	0	1	26
Newark	12	3	0	0	0	3	1	0	1	43	118
Trenton	1	0	0	0	0	4	1	2	2	5	34
Pennsylvania:											
Philadelphia	61	59	0	0	0	22	6	7	0	24	407
Pittsburgh	38	-------	0	-------	-------	-------	1	-------	-------	-------	-------
Reading	2	7	0	0	0	0	0	0	1	1	28
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	18	7	0	0	0	13	1	0	0	7	143
Cleveland	27	18	0	0	0	10	2	4	0	83	188
Columbus	9	22	0	0	0	3	1	0	0	1	76
Toledo	12	10	0	0	0	5	1	1	0	5	67

[1] No estimate made.

[2] Pulmonary tuberculosis only.

City reports for week ended November 12, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
EAST NORTH CENTRAL—con.											
Indiana:											
Fort Wayne	2	5	0	0	0	0	1	1	0	1	23
Indianapolis	10	25	2	2	0	7	0	3	0	3	96
South Bend	3	2	1	0	0	0	0	0	0	0	23
Terre Haute	4	3	0	3	0	0	0	0	0	0	16
Illinois:											
Chicago	95	80	0	1	0	33	5	2	0	77	684
Springfield	2	12	0	0	0	0	0	0	0	0	18
Michigan:											
Detroit	67	39	1	0	0	15	3	2	0	52	285
Flint	9	14	0	0	0	0	1	1	0	1	15
Grand Rapids	9	5	0	0	0	0	1	0	0	0	37
Wisconsin:											
Kenosha	1	2	1	0	0	0	0	0	0	0	12
Milwaukee	19	18	2	0	0	3	0	1	0	13	93
Racine	5	2	1	0	0	0	1	0	0	0	-------
Superior	2	11	0	0	0	0	0	0	0	0	-------
WEST NORTH CENTRAL											
Minnesota:											
Duluth	7	2	0	0	0	1	0	0	0	4	22
Minneapolis	44	16	2	0	0	4	1	2	0	1	81
St. Paul	18	14	1	0	0	2	1	0	0	1	45
Iowa:											
Davenport	1	0	1	0	-------	-------	0	0	-------	1	-------
Des Moines	9	7	1	15	-------	-------	0	0	-------	0	34
Sioux City	3	1	0	0	-------	-------	0	0	-------	3	-------
Waterloo	2	0	0	0	-------	-------	0	0	-------	0	-------
Missouri:											
Kansas City	11	11	0	2	0	4	1	3	0	5	94
St. Joseph	4	4	0	48	0	2	0	1	0	0	40
St. Louis	34	20	0	0	0	10	3	6	0	19	228
North Dakota:											
Fargo	2	5	0	0	0	0	0	0	0	0	8
Grand Forks	1	0	0	0	-------	-------	0	0	-------	0	-------
South Dakota:											
Aberdeen	0	1	0	0	-------	-------	0	0	-------	0	-------
Sioux Falls	2	6	0	0	-------	-------	0	2	-------	0	7
Nebraska:											
Lincoln	2	2	0	0	0	0	0	0	0	12	15
Omaha	4	4	2	1	0	0	0	1	0	0	44
Kansas:											
Topeka	3	2	0	1	0	0	0	0	0	5	16
Wichita	4	15	0	27	0	1	1	1	0	0	32
SOUTH ATLANTIC											
Delaware:											
Wilmington	4	1	0	0	0	0	1	1	0	0	27
Maryland:											
Baltimore	15	20	0	0	0	8	4	3	0	12	214
Cumberland	0	3	0	0	0	1	0	0	0	0	13
Frederick	0	2	0	0	0	1	0	0	0	0	4
District of Columbia:											
Washington	16	21	0	0	0	13	2	4	1	2	132
Virginia:											
Lynchburg	1	1	0	0	0	0	0	0	0	3	11
Norfolk	2	3	0	0	0	1	0	0	0	2	-------
Richmond	9	6	0	0	0	3	0	0	0	0	45
Roanoke	3	12	0	0	0	2	0	0	1	0	24
West Virginia:											
Charleston	2	2	0	0	0	1	0	0	0	0	13
Wheeling	3	0	0	0	0	1	0	0	0	0	17
North Carolina:											
Raleigh	2	1	0	0	0	1	0	0	0	0	10
Wilmington	1	2	1	0	0	1	0	0	0	0	12
Winston-Salem	2	6	0	0	0	0	0	0	0	0	21
South Carolina:											
Charleston	1	1	0	0	0	0	1	1	0	2	29
Columbia	1	0	0	0	-------	1	0	1	-------	0	16
Greenville	1	3	0	0	0	0	0	0	0	0	7

City reports for week ended November 12, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
SOUTH ATLANTIC—continued											
Georgia:											
Atlanta	6	13	1	0	0	1	1	0	0	0	54
Brunswick	0	0	0	0	0	1	0	0	0	0	4
Savannah	1	4	0	3	0	2	0	0	0	0	35
Florida:											
Miami		1		0	0	1		0	0	0	30
St. Petersburg	0		0		0	0	0		0		10
Tampa	1	0	0	0	0	2	0	1	0	1	19
EAST SOUTH CENTRAL											
Kentucky:											
Covington	3	4	0	0	0	1	0	0	0	0	
Lexington		0		0	0	2		0	0	0	16
Louisville	6	8	0	0	0	3	1	0	0	1	84
Tennessee:											
Memphis	5	11	0	0	0	3	2	1	0	0	55
Nashville	4	1	0	0	0	4	2	0	0	0	42
Alabama:											
Birmingham	5	4	1	0	0	7	1	0	0	0	68
Mobile	1	1	0	0	0	0	0	0	0	0	22
Montgomery	0	1	0	0	0	0	0	0	0	0	
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1		0				1				
Little Rock	2	3	0	0	0	0	1	0	0	0	
Louisiana:											
New Orleans	5	4	0	0	0	22	2	3	0	2	162
Shreveport	2	4	0	0	0	3	1	2	0	0	33
Oklahoma:											
Tulsa		1		0				0		1	
Texas:											
Dallas	5	9	1	0	0	3	1	2	0	2	43
Galveston	0	0	0	0	0	3	0	0	0	0	22
Houston	3	3	0	1	1	3	0	0	1	0	71
San Antonio	1	2	0	0	0	7	0	1	0	0	54
MOUNTAIN											
Montana:											
Billings	0	0	1	0	0	0	0	0	0	0	7
Great Falls	2	2	1	2	0	0	0	0	0	0	4
Helena	0	0	0	1	0	0	0	0	0	0	6
Missoula	1	2	0	0	0	1	0	0	0	0	6
Idaho:											
Boise	0	0	0	0	0	0	0	0	0	0	5
Colorado:											
Denver	9	8	2	0	0	12	1	0	0	1	94
Pueblo	1	1	0	0	0	0	1	0	0	0	5
New Mexico:											
Albuquerque	1	2	0	0	0	1	0	0	0	0	12
Utah:											
Salt Lake City	2	3	0	0	0	1	1	1	0	4	35
Nevada:											
Reno	1	1	0	0	0	0	0	0	0	0	4
PACIFIC											
Washington:											
Seattle	8		3				2				
Spokane	9		3				0				
Tacoma	2	1	3	0	0	2	0	0	0	1	35
Oregon:											
Portland	9	5	3	3	0	3	1	1	0	0	61
California:											
Los Angeles	19	14	3	0	0	24	2	0	0	18	240
Sacramento	2	1	1	1	0	2	0	0	0	0	15
San Francisco	10	18	0	0	0	12	1	2	0	4	163

City reports for week ended November 13, 1937—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases estimated expectancy	Cases	Deaths
NEW ENGLAND									
Maine:									
Portland	0	0	0	0	0	0	0	0	1
Massachusetts:									
Boston	1	1	1	1	0	0	1	17	2
Fall River	0	0	0	0	0	0	0	1	0
Worcester	0	0	0	0	0	0	0	1	1
Rhode Island:									
Providence	0	0	1	0	0	0	1	0	0
Connecticut:									
Hartford	0	0	0	0	0	0	0	1	0
MIDDLE ATLANTIC									
New York:									
Buffalo	0	0	0	2	0	0	0	0	0
New York	4	4	2	1	0	0	6	12	1
New Jersey:									
Newark	0	0	1	0	0	0	0	1	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	0	0	0	0	0	0	0	2	0
Cleveland	0	0	1	0	0	1	1	1	0
Columbus	0	0	0	0	0	0	0	2	0
Indiana:									
Fort Wayne	0	0	0	0	0	0	0	4	1
Illinois:									
Chicago [1]	4	0	1	0	2	2	1	6	2
Michigan:									
Detroit	0	0	0	0	0	0	1	6	2
Grand Rapids	0	0	0	0	0	0	0	1	0
Wisconsin:									
Milwaukee	4	2	1	0	0	0	0	0	0
Racine	0	2	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	0	0	0	1	0	0	0	0	0
Iowa:									
Waterloo	0	0	0	0	0	0	0	2	1
Missouri:									
Kansas City	1	0	0	0	0	0	0	0	0
SOUTH ATLANTIC									
Maryland:									
Baltimore	0	0	2	0	0	0	1	1	0
District of Columbia:									
Washington	0	0	1	1	0	0	0	0	0
Virginia:									
Lynchburg	0	0	0	0	0	1	0	0	0
West Virginia:									
Wheeling	0	0	0	0	0	0	0	2	0
South Carolina:									
Charleston [2]	0	0	0	0	0	2	0	0	0
Georgia: [2,3]									
Atlanta	0	0	0	0	0	1	0	0	0
Florida:									
St. Petersburg	------	1	------	0	------	0	0	------	0
Tampa	0	0	0	0	0	0	0	2	0
EAST SOUTH CENTRAL									
Tennessee:									
Memphis	0	0	0	1	0	1	0	0	0
Alabama:									
Birmingham	0	1	0	0	1	0	0	0	0

[1] Rabies (human): 1 case and 1 death at Chicago, Ill.
[2] Dengue: 6 cases at Charleston, S. C., and 1 case at Savannah, Ga.
[3] Typhus fever: 1 case at Savannah, Ga.

City reports for week ended November 12, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases estimated expectancy	Cases	Deaths
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	2	0	0	0
Louisiana:									
New Orleans	0	0	0	0	1	2	0	0	0
Oklahoma:									
Tulsa	0	0	0	0	0	0	0	2	1
Texas.									
Dallas	0	0	0	0	2	0	0	0	0
Galveston	0	0	0	0	0	1	0	0	0
Houston	0	0	0	0	0	2	0	0	0
MOUNTAIN									
Montana·									
Great Falls	0	0	0	0	0	0	0	1	0
Idaho·									
Boise	0	0	0	0	0	0	0	5	0
Colorado:									
Denver	1	0	0	0	0	0	0	0	0
Utah·									
Salt Lake City	1	1	0	0	0	0	0	0	0
PACIFIC									
Washington									
Tacoma	0	0	0	0	0	0	0	8	5
Oregon									
Portland	0	0	0	0	0	0	0	6	0
California·									
Los Angeles	2	0	0	0	0	0	0	6	1
Sacramento	0	0	0	0	0	0	0	1	1
San Francisco	1	0	0	1	0	0	0	2	0

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended November 12, 1927, compared with those for a like period ended November 13, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, October 9 to November 12, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927
101 cities	165	144	203	170	213	195	224	[3] 214	228	[3] 205
New England	85	128	85	123	106	135	118	114	134	160
Middle Atlantic	100	123	122	143	138	191	143	226	163	[4] 177
East North Central	218	138	260	199	241	232	275	261	264	254
West North Central	210	119	240	129	264	139	252	195	222	161
South Atlantic	216	203	300	194	354	192	317	185	387	190
East South Central	269	158	398	168	383	200	424	153	264	209
West South Central	219	256	279	268	331	298	253	323	378	[5] 264
Mountain	164	198	255	153	155	99	219	99	182	279
Pacific	174	154	190	220	204	152	287	[2] 144	230	[6] 224

MEASLES CASE RATES

	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927
101 cities	43	50	49	55	64	70	81	[3] 77	106	[3] 69
New England	26	132	26	186	24	190	66	241	31	341
Middle Atlantic	9	53	12	64	13	72	16	72	44	[4] 44
East North Central	36	17	50	21	77	18	80	29	101	27
West North Central	44	14	42	22	85	34	151	14	147	16
South Atlantic	20	69	26	45	9	107	20	132	24	136
East South Central	0	127	21	51	21	204	26	234	10	76
West South Central	13	55	4	38	0	21	9	21	26	[5] 18
Mountain	237	18	337	72	392	63	793	9	1,531	18
Pacific	289	58	276	50	340	92	313	[2] 80	279	[6] 76

SCARLET FEVER CASE RATES

	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927
101 cities	129	96	152	117	169	146	188	[3] 149	206	[3] 147
New England	144	130	193	151	245	211	264	200	351	204
Middle Atlantic	62	63	51	74	92	97	94	110	125	[4] 99
East North Central	132	108	155	128	157	166	186	173	182	177
West North Central	319	175	378	137	355	248	416	165	347	185
South Atlantic	125	91	162	161	132	168	197	159	177	183
East South Central	145	82	222	148	331	138	248	168	295	153
West South Central	86	88	95	80	112	126	112	151	142	[5] 108
Mountain	264	108	447	279	365	144	583	180	702	153
Pacific	204	97	233	136	236	97	204	[2] 149	279	[6] 117

SMALLPOX CASE RATES

	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927
101 cities	4	6	3	7	3	7	3	[3] 18	5	[3] 16
New England	0	0	0	0	0	9	0	0	0	0
Middle Atlantic	0	0	0	0	0	0	0	0	0	[4] 0
East North Central	3	5	3	0	1	0	6	6	10	4
West North Central	6	26	0	42	2	52	2	159	10	157
South Atlantic	4	2	9	7	6	0	0	14	2	5
East South Central	0	0	10	5	5	5	10	0	10	0
West South Central	4	4	0	0	4	0	9	4	30	[5] 4
Mountain	9	72	0	72	9	45	0	36	9	27
Pacific	32	16	16	21	21	16	3	[2] 19	5	[6] 3

[1] The figures given in this table are rates per 100,000 population annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.

[2] Tacoma, Wash., not included.

[3] Pittsburgh, Pa., Fort Smith, Ark., Seattle, Wash., and Spokane, Wash., not included.

[4] Pittsburgh, Pa., not included.

[5] Fort Smith, Ark., not included.

[6] Seattle, Wash., and Spokane, Wash., not included.

Summary of weekly reports from cities, October 9 to November 12, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927
101 cities	32	19	26	20	27	17	24	[2] 19	21	[3] 15
New England	57	16	19	16	12	19	17	16	9	16
Middle Atlantic	26	16	20	15	14	12	12	20	21	[4] 15
East North Central	16	18	12	16	17	13	13	7	10	9
West North Central	14	22	22	22	24	16	26	24	16	28
South Atlantic	65	27	76	33	75	22	45	31	35	20
East South Central	140	31	96	31	140	46	103	36	52	5
West South Central	26	29	21	29	39	38	21	59	34	[5] 34
Mountain	46	63	27	81	46	27	91	36	27	9
Pacific	16	8	13	16	19	16	46	[2] 6	29	[6] 7

INFLUENZA DEATH RATES

	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927
95 cities	6	6	7	9	11	8	11	[2] 9	14	[4] 7
New England	5	2	7	5	7	0	12	5	2	2
Middle Atlantic	4	8	8	7	8	4	9	8	10	[4] 7
East North Central	2	3	5	5	14	5	6	9	10	5
West North Central	11	2	2	12	2	6	6	10	13	2
South Atlantic	8	7	8	11	21	13	15	7	17	17
East South Central	16	10	10	25	10	41	21	15	26	15
West South Central	13	13	13	13	26	17	40	26	66	17
Mountain	27	9	27	18	9	27	18	18	27	18
Pacific	11	3	0	14	7	10	7	[2] 7	14	9

PNEUMONIA DEATH RATES

	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927
95 cities	77	71	86	77	96	91	101	[2] 90	106	[4] 103
New England	75	95	83	86	99	65	99	63	90	95
Middle Atlantic	88	72	104	75	101	92	114	87	115	[4] 109
East North Central	62	49	61	66	86	82	85	93	87	89
West North Central	53	60	49	64	63	69	84	62	76	75
South Atlantic	89	108	113	72	108	88	121	118	140	120
East South Central	52	46	96	127	134	112	96	112	165	138
West South Central	106	69	58	86	88	190	115	90	110	139
Mountain	118	117	128	144	182	144	164	117	155	144
Pacific	81	83	99	100	88	97	49	[2] 100	99	100

[2] Tacoma, Wash., not included.
[3] Pittsburgh, Pa., Fort Smith, Ark., Seattle, Wash., and Spokane, Wash., not included.
[4] Pittsburgh, Pa., not included.
[5] Fort Smith, Ark., not included.
[6] Seattle, Wash., and Spokane, Wash., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

THE FAR EAST

Report for week ended November 5, 1927.—The following report for the week ended November 5, 1927, was transmitted by the Eastern Bureau of the Health Section of the Secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Plague, cholera, or smallpox was reported present in the following ports:

PLAGUE

India.—Rangoon, Bassein.
Dutch East Indies.—Surabaya, Makassar.
Siam.—Bangkok.

CHOLERA

India.—Tuticorin.
Siam.—Bangkok.
Straits Settlements.—Singapore.
China.—Canton.

SMALLPOX

Iraq.—Basra.
Dutch East Indies.—Samarinda.
Sarawak—Kuching.
French Indo-China.—Saigon and Cholon.

Returns for the week ended November 5 were not received from the following ports:

India.—Calcutta.
Dutch East Indies.—Banjermasin.
Union of Socialist Soviet Republics.—Vladivostok.

Reports from other maritime towns reporting to the Singapore Bureau indicated no case of plague, cholera, or smallpox during the week.

ARGENTINA

Mortality from communicable diseases—Rosario—September, 1927.—During the month of September, 1927, mortality from communicable diseases was reported at Rosario, Argentina, as follows:

Disease	Deaths	Disease	Deaths
Cerebrospinal meningitis	22	Scarlet fever	5
Diphtheria	3	Tuberculosis	21
Gastroenteritis	5	Typhoid fever	1
Measles	1		

Population (estimated), 418,728. Total number of deaths from all causes, 566.

Plague—Bahia Blanca—Cordoba—November 21, 1927.—Under date of November 21, 1927, a case of plague was reported near Bahia Blanca, Argentina. It was stated that the port was free from plague. Under the same date an outbreak of plague, with 10 cases, was reported as having occurred three weeks previously in the interior of Cordoba, Argentina.

CANADA

Communicable diseases—Week ended November 12, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases from seven provinces of Canada for the week ended November 12, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever			1		1			2
Influenza	21							21
Poliomyelitis	1	2	1	1			6	11
Smallpox				77		2	1	80
Typhoid fever	3	6	20	24	2	1	3	59

Communicable diseases—Quebec—Week ended November 12, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended November 12, 1927, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	1	Poliomyelitis (infantile paralysis)	1
Chicken pox	27	Scarlet fever	102
Diphtheria	89	Smallpox	12
German measles	4	Tuberculosis	20
Influenza	2	Typhoid fever	20
Measles	124	Whooping cough	5

Typhoid fever—Montreal—January 2–November 19, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	June 18, 1927	86	18
Jan. 15, 1927	4	3	June 25, 1927	75	23
Jan. 22, 1927	1	2	July 2, 1927	66	21
Jan. 29, 1927	3	1	July 9, 1927	52	10
Feb. 5, 1927	1	0	July 16, 1927	39	4
Feb. 12, 1927	0	0	July 23, 1927	22	9
Feb. 19, 1927	1	2	July 30, 1927	23	10
Feb. 26, 1927	1	1	Aug. 6, 1927	16	5
Mar. 5, 1927	9	1	Aug. 13, 1927	20	5
Mar. 12, 1927	203	4	Aug. 20, 1927	14	4
Mar. 19, 1927	383	14	Aug. 27, 1927	8	3
Mar. 26, 1927	568	22	Sept. 3, 1927	27	0
Apr. 2, 1927	649	48	Sept. 10, 1927	17	0
Apr. 9, 1927	386	40	Sept. 17, 1927	18	2
Apr. 16, 1927	175	38	Sept. 24, 1927	6	3
Apr. 23, 1927	125	43	Oct. 1, 1927	18	1
Apr. 30, 1927	105	23	Oct. 8, 1927	14	1
May 7, 1927	106	19	Oct. 15, 1927	5	1
May 14, 1927	367	16	Oct. 22, 1927	3	1
May 21, 1927	770	26	Oct. 29, 1927	9	1
May 28, 1927	353	38	Nov. 5, 1927	1	1
June 4, 1927	239	37	Nov. 12, 1927	3	0
June 11, 1927	128	36	Nov. 19, 1927	2	2

CHINA

Further relative to outbreak of pneumonic plague—Tungliao.—Information dated October 11, 1927, shows that the area previously reported attacked by pneumonic plague[1] is situated about 10 miles north of Tungliao and that about 200 fatal cases of the disease have been reported. The outbreak was stated to have followed a large religious gathering of the Mongol population.

CUBA

Communicable diseases—Provinces—July 3–October 1, 1927.—During the period from July 3 to October 1, 1927, cases of communicable diseases were reported from six Provinces of Cuba as follows:

Disease	Pinar Del Rio	Habana	Matanzas	Santa Clara	Camaguey	Oriente	Total
Chicken pox	1	5	7	3	2	6	24
Diphtheria	4	20	14	8	3	10	59
Malaria	15	224	7	8	143	776	1,173
Measles	8	59	29	26	3	3	128
Paratyphoid fever	47	30	13	25	4	12	131
Poliomyelitis (infantile paralysis)	1						1
Scarlet fever		8	2	1			11
Tetanus (infantile)	1	1		1	1		4
Typhoid fever	91	366	148	183	68	141	997

ESTONIA

Communicable diseases—September, 1927.—During the month of September, 1927, communicable diseases were reported in the Republic of Estonia as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	1	Scarlet fever	136
Diphtheria	34	Tuberculosis	132
Measles	17	Typhoid fever	96

Population: Census, 1,107,059

GREECE

Plague—Patras—October 30–November 5, 1927.—During the week ended November 5, 1927, a fatal case of plague was reported at Patras, Greece.

JAVA

Cholera—Anticholera inoculation—Batavia.—Under date of November 19, 1927, 25 cases of cholera with 15 deaths were reported at Batavia, Java. It was stated that 37,000 persons had been inoculated against cholera.

[1] Public Health Reports, Oct. 28, 1927, p. 2689

LATVIA

Communicable diseases—August, 1927.—During the month of August, 1927, communicable diseases were reported in the Republic of Latvia as follows:

Disease	Cases	Disease	Cases
Anthrax	1	Poliomyelitis	5
Cerebrospinal meningitis	3	Puerperal fever	2
Diphtheria	24	Rabies	2
Dysentery	12	Scarlet fever	109
Erysipelas	4	Tetanus	3
Influenza	16	Trachoma	24
Leprosy	1	Typhoid fever	114
Measles	78	Whooping cough	82
Mumps	1		

Population, 1,950,000.

PERSIA

Quarantine camp for travelers from Baghdad at Kasr-i-Shirin.—Information dated October 21, 1927, states that during the preceding 10 weeks, since the outbreak of cholera at Basra, the Persians have maintained a quarantine camp at Kasr-i-Shirin, where all travelers entering Persia from Baghdad were required to pass five days' quarantine.

SALVADOR

Mortality from communicable diseases—June, 1927—April 1–June 30, 1927.—Mortality from communicable diseases and general mortality have been reported for the Republic of Salvador, Central America, for the month of June, 1927, and the three months ended June 30, 1927, as follows:

Disease	Deaths June 1-30, 1927	Deaths April 1-June 30, 1927	Disease	Deaths June 1-30, 1927	Deaths April 1-June 30, 1927
All causes	2,469	6,901	Measles	5	83
Gastroenteritis	39	162	Tuberculosis	19	107
Diphtheria	1	5	Typhoid fever	1	5

Population, 1,600,000.

SENEGAL

Plague—Cayor District—October 17–23, 1927.—During the week ended October 23, 1927, 10 cases of plague with five deaths were reported in the district of Cayor, Senegal, West Africa.

Yellow fever.—During the same period five cases of yellow fever were reported in Senegal, with four deaths, distributed as follows: At Kebemer, N'Dande, Sebikotane, and Thies, one fatal case each; at Mekhe, one case.

UNION OF SOUTH AFRICA

Influenza—Pneumonia—Cape Town—September, 1927.—During the four weeks ended September 30, 1927, 23 cases of influenza with four deaths, and 64 deaths from pneumonia (all forms) were reported at Cape Town, Union of South Africa.

Smallpox—Typhus fever—Cape Province—October 2-8, 1927.—Smallpox was reported present in one district and typhus fever in three districts of the Cape Province, Union of South Africa.

Typhoid fever outbreak—Transvaal—August 20-October 8, 1927.—A serious outbreak of typhoid fever has been reported in the Ermelo municipality, Transvaal, with 21 cases in Europeans and 12 native cases, from August 20 to October 8, 1927. The infection was attributed to contamination of a spring which flowed directly into the city main.

YUGOSLAVIA

Communicable diseases—October, 1927.—During the month of October, 1927, communicable diseases were reported in Yugoslavia as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	82	8	Poliomyelitis	3	
Cerebrospinal meningitis	5	3	Scarlet fever	1,472	158
Diphtheria	365	65	Tetanus	22	15
Dysentery	134	15	Typhoid fever	829	85
Measles	973	9	Typhus fever	1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended December 2, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	Oct 9-15	2		
India:				
Calcutta	Oct 9-15	34	19	
Madras	Oct 16-22	1	1	
Rangoon	Oct 2-8	1	1	
Indo-China (French):				
Saigon	Oct. 1-7	1		
Java:				
Batavia	Reported Nov. 19	25	15	
Siam				Oct. 2-8, 1927; Cases, 4; deaths, 2. Apr 1-Oct. 8, 1927: Cases, 753, deaths, 518.
Bangkok	Oct 2-8	2		District.

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended December 2, 1927—Continued

PLAGUE

Place	Date	Cases	Deaths	Remarks
Argentina:				
Bahia	Nov. 21	1		In vicinity.
Cordoba Province	do	10		Reported as having occurred three weeks previously.
Azores:				
St. Michael's	Oct. 15-29	3		At Arrifes, cases, 2; at Ribeira Grande, 1 case.
China—				
Tungliao	Oct. 11	200		Estimated.
Greece:				
Patras	Oct. 30-Nov. 5	1	1	
India:				
Bombay	Oct. 2-8	2	2	
Madras Presidency	Sept. 25-Oct. 1	88	60	
Rangoon	Oct. 2-15	5	5	
Java:				
East Java and Madura—				
Surabaya	Sept. 11-17	2	2	
Senegal:				
Cayor District	Oct. 17-23	10	5	
Siam				Oct. 2-8, 1927: Cases, 1; deaths, 1. Apr. 1-Oct. 8, 1927: Cases, 11; deaths, 8.
Bangkok	Oct. 2-8	1		District.
Turkey:				
Constantinople	Sept. 26-Oct. 1	1	1	

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Brazil:				
Rio de Janeiro	Sept. 18-24	2	2	
British South Africa:				
Northern Rhodesia	Oct. 1-7	97	7	In natives
Canada.				
Alberta	Nov. 6-12	1		
Manitoba—				
Winnipeg	Nov. 13-19	1		
Ontario				Nov. 6-12, 1927: Cases, 77.
Ottawa	Nov. 13-19	19		
Toronto	Nov. 6-12	3		
Quebec—				
Riviere du Loup	Nov. 13-19	3		
Saskatchewan				Nov. 6-12, 1927: Cases, 2.
Regina	Nov. 6-12	1		
China:				
Chefoo	Oct. 9-15			Present.
Manchuria—				
Mukden	Oct. 16-22	1		
Great Britain.				
Bradford	Oct. 30-Nov. 5	5		
Leeds	do	1		
Manchester	do	1		
Sheffield	Oct. 23-29	4		
India:				
Bombay	Oct. 2-8	2		
Calcutta	Oct. 9-15	1	1	
Madras	Oct. 16-22	2		
Rangoon	Oct. 2-8	8	1	
Java:				
Batavia	Nov. 6-12	25	15	
Surabaya	Sept. 11-17	3		
Siam				Oct. 2-8, 1927: Cases, 3. Apr. 1-Oct. 8, 1927: Cases, 253; deaths, 67.
Syria:				
Damascus	Oct. 1-20	22		
Union of South Africa:				
Cape Province	Oct. 2-8			Outbreak in 1 district.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended December 2, 1927—Continued

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Bulgaria:				
Sofia	Oct. 29-Nov. 4	1	1	
Mexico:				
Mexico City	Oct. 23-Nov. 5	16		Including municipalities in Federal district.
Union of South Africa:				
Cape Province	Oct. 2-8			Outbreaks in 3 districts.
Transvaal—				
Johannesburg	Oct. 9-15	5		
Yugoslavia				October, 1927: Cases, 1.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Senegal				Oct. 17-23, 1927: Cases, 5; deaths, 4.
Kebemer	Oct. 17-23	1	1	
Mekhe	do	1		
N'Dande	do	1	1	
Sebikotane	do	1	1	
Thies	do	1	1	

Reports Received from June 25 to November 25, 1927[1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-Oct. 8	117	11	
Canton	May 1-Oct. 1	89	54	
Foochow	July 24-Sept. 10			Present.
Hong Kong	July 17-Sept. 3	3	3	
Kulangsu	June 21	1		
Shanghai	June 19-25	2		
Do	July 31-Oct. 15		118	In international settlement and French concession.
Swatow	May 15-Sept. 10	138	13	
Tientsin	Aug. 27-Oct. 1	14		
India	Apr. 17-Sept. 24			Cases, 179,604; deaths, 97,933.
Bombay	May 8-Sept. 17	127	57	
Calcutta	May 8-Oct. 8	761	452	
Karachi	May 29-June 4	1	1	
Madras	June 19-Oct. 15	832	441	
Rangoon	May 8-Oct. 1	23	19	
India, French Settlements in	Mar. 30-Aug. 27	253	168	
Indo-China (French)	Apr. 1-Sept. 20			Cases, 15,564.
Annam	do	4,509		
Cambodia	do	408		
Cochin-China	do	1,606		
Saigon	June 4-Sept. 2	11	4	
Laos	July 11-Sept. 20	223		
Tonkin	Apr. 1-Sept 20	9,818		
Iraq:				
Amarah	Oct. 2-8	10	3	
Baghdad	July 24-30	29	18	
Basra	July 17-Oct. 8	384	289	
Diwaniyah	Oct. 2-8	44	26	
Hillah	do	1		
Kerbala	do	11	7	
Kut	do	1		
Muntafiq	do	5	3	
Japan:				
Yokohama	July 31-Aug. 6	1	1	
Persia:				
Abadan	July 24-Aug. 13	215	183	
Ahwaz	July 31-Aug. 13	20	13	
Minab	Aug. 7-13		23	
Mohammerah	July 17-Aug. 27	194	155	
Nasseri	July 19-31		10	

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 25, 1927—Continued

CHOLERA—Continued

Place	Date	Cases	Deaths	Remarks
Philippine Islands:				
Bulacan Province	June 7-July 8	3	2	
Leyte Province—				
Barugo	June 20	1	1	
Carigara	June 23	1	1	Final diagnosis not received.
Palo	May 18	1		
Manila	July 17-Aug. 27	2		
Siam	May 1-Oct. 1			Cases, 362; deaths, 213.
Bangkok	do	51	18	
On vessel:				
S. S. Adrastus	Reported Aug. 6	1	1	At Yokohama, Japan.
S. S. Montreal Maru	Sept. 20			At Muke, Japan.
S. S. Tabaristan	Oct. 6	1		Case in coolie removed at Basra.
S. S. Morea	Sept. 2			At Hong Kong; cholera-infected.
S. S. War Mehtar (oil tanker).	Aug. 4	1	1	At Saffagha, Egypt.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	Aug. 21-Oct. 20	3		
Oran	Aug. 21-Sept. 10	5	4	
Argentina	Jan. 1-Aug. 2			Cases, 80; deaths, 44.
Buenos Aires	Apr. 10-May 7	4	3	
Cordoba	Jan. 11-Aug. 6	52	29	
Corrientes	June 1	1	1	
Entre Rios	Mar. 29-Aug. 13	8	1	
Sante Fe	Apr. 28-May 16	4	3	
Territory—				
Chaco—				
Barranqueras	May 29	2	2	
Formosa	June 25	3	2	
Pampa	July 27-Aug. 2	4		
Rio Negro	Aug. 6	1		
City—				
Merou	Reported July 14			Present.
Rosario	May 7	1	1	
Santa Fe	May 16	4	2	
Azores:				
St. Michaels Island	May 15-Oct. 1	9	1	
Ribeira Grande	June 12-18	1		
Brazil:				
Sao Paulo	June 3-9	1	1	
British East Africa:				
Kenya	Apr. 24-July 31	73	14	
Mombassa	July 24-30	1	1	
Nairobi	May 22-28	6		
Tanganyika	Mar. 29-May 28		37	
Do	July 24-Aug 28		40	
Uganda	Jan 1-Feb. 28	138	121	
Do	Mar. 27-June 18	469	300	
Canary Islands:				
Laguna district—				
Tejina	June 17	1		
Las Palmas	Oct. 8-11	8		
Ceylon:				
Colombo	May 1-Oct. 1	23	14	Plague rats, 4.
China:				
Amoy	July 3-23			Present in surrounding country.
Mongolia	Reported Oct. 11		200	Approximate.
Tientsin	Aug. 14-20	2		
Tungliao	Reported Oct. 15			Outbreak.
Ecuador:				
Guayaquil	June 1-Aug. 31	7		Rats taken, 72,410; found infected, 45.
Egypt:				
Alexandria	June 4-Sept. 2	4		
Beni-Souef	June 4-July 13	5	2	
Biba	June 4-10	1		At Nama.
Dakhalia	June 24-July 9	6	1	
Minia	Aug. 8-9	4		
Port Said	June 24-July 21	4	1	
Suez	Sept. 4	1		
Tanta district	June 4-10	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 25, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Greece	May 1-June 30	4	3	
Athens	June 1-Aug. 20	3		Including Piraeus.
Mytilene	Aug. 9-Sept. 26	6		
Patras	May 30-Oct. 1	9	2	
Hawaii Territory:				
Hamakua	July 15-Aug. 30			2 plague rodents.
Hawaii:				
Kapulena	Oct. 22			1 plague rodent.
Honokaa	May 17-23	2	2	
Kukuihaele	Aug. 12-17	1	1	Do.
Paauilo	July 26-Aug. 1		4	
India	Apr. 17-Oct. 24			Cases, 25,408; deaths, 11,164.
Bombay	May 8-Sept. 24	102	86	
Calcutta	Aug. 21-Sept. 3	18	10	
Madras	May 1-Sept. 24	1,447	660	
Rangoon	May 8-Oct. 1	73	67	
Indo-China (French)	Apr. 1-Aug. 10	50		
Saigon	Sept. 2-16	2		
Kwang-Chow-Wan	May 21-July 31	73		
Iraq:				
Baghdad	Apr. 8-May 28	12	1	
Java:				
Batavia	May 1-Oct. 8	346	327	Province.
East Java and Madura	May 22-July 16	28	27	
Pasoeroean Residency	May 9			Outbreak reported at Nagdiwano.
Surabaya	Apr. 17-Sept. 24	92	90	
Madagascar				Mar. 16-Apr. 30, 1927: Cases, 256; deaths, 135.
Province—				
Ambositra	Mar. 16-Aug. 15	100	93	
Antisirabe	Mar. 16-Aug. 31	42	42	
Miarinarivo (Itasy)	do	80	70	
Moramanga	May 16-Aug. 31	32	31	
Tananarive	Mar. 16-Aug. 31	281	247	
Tananarive Town	Mar. 16-June 30	22	20	
Mauritius:				
Port Louis	May 1-June 30	1	1	
Nigeria	Mar. 1-May 31	228	117	
Peru	Apr.-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	Apr. 1-July 31	13	8	
Lima City	Apr. 1-30	5	1	
Senegal	May 23-Oct. 16			Cases, 1,159; deaths, 646.
Baol	June 2-Oct. 16	235	100	
Cayor Frontier	July 4-Oct 16	982	556	
Dakar	June 20-Oct. 2	147	94	
Facel	July 6	17	8	
Guindel	June 20-26	11	2	
Louga district	Sept. 18-Oct. 16	13	4	
M'Bour	July 6-10	28	23	
Medina	June 13-19	2	2	
Pout	July 4-10	1		
Rufisque	May 23-Sept. 25	223	107	
Thies district	do	34	15	
Tivaouane	June 2-July 17	50	32	
Siam	Apr. 1-June 25			Cases, 10; deaths, 7.
Bangkok	May 8-June 11	2	1	
Syria:				
Beirut	June 11-Sept. 10	4		
Tunisia	Apr. 21-July 10	144		
Tunis	July 25-Aug. 1	1		
Turkey:				
Constantinople	May 13-19	1		
Do	Sept. 18-24	1		
Union of South Africa:				
Cape Province—				
Maraisburg district	May 1-14	2	2	Native.
Orange Free State—				
Edenburg district	July 17-26	3	3	Natives; on farm.
Rouxville district	July 24-Aug. 6	2	2	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 25, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
On vessel:				
S. S. Avoroff	June 24-30	1		Greek warship at port of Athens.
S. S. Capafric	Aug. 23	3	1	At Duala, French Cameroons, from Nigeria.
S. S. Elcano	Aug. 19	1		At Piraeus, Greece.
S. S. Madonna	Aug. 24	1		At Dakar, Senegal, from ports south.
S. S. Ransholm	Aug. 5	3		At Gefle, Sweden, from Rufisque, Senegal.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-Sept. 20			Cases, 955.
Algiers	May 11-June 30	8		
Oran	May 21-Oct. 29	74		
Angola	June 1-July 31	45		
Loanda	Sept. 1-15	1		
Portuguese Congo	do	4		
Arabia:				
Aden	July 17-Aug. 1	2	1	
Brazil:				
Bahia	Aug. 7-13	1		
Porto Alegre	July 1-Sept. 30	11		
Rio de Janeiro	May 22-Sept. 17	23	19	
British East Africa:				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 29-June 18		22	
Do	Aug. 7-28		21	
Zanzibar	Apr. 1-Aug. 31	121	41	
British South Africa:				
Northern Rhodesia	Apr 30-Sept. 30	190	8	
Canada	June 5-Nov. 5			Cases, 851.
Alberta	June 12-Nov. 5			Cases, 241.
Edmonton	Oct 23-29	1		
Calgary	June 12-Aug. 27	9		
British Columbia—				
Vancouver	May 23-Sept. 4	4		
Manitoba	June 5-Nov. 5			Cases, 62.
Winnipeg	June 12-Oct. 22	23		
Nova Scotia	Sept. 11-Oct. 15	2		
Halifax	Oct. 8-15	1		
Ontario	June 5-Nov. 5			Cases, 413.
Ottawa	June 12-Nov. 12	220		
Sarnia	Aug 7-13	1		
Toronto	June 19-Nov. 5	39		
Windsor	Oct. 2-15	9		
Quebec	June 19-Nov. 5	32		
Riviere du Loup	Oct. 29-Nov. 5	3		
Saskatchewan	June 12-Nov. 5			Cases, 168.
Moose Jaw	Aug. 14-Oct. 22	24		
Regina	July 17-Oct. 8	15		
Ceylon	May 1-7			Cases, 3; deaths, 1.
Colombo	July 31-Aug. 6	1	1	
China:				
Amoy	May 8-28	1		
Do	July 3-16			Present in surrounding country.
Antung	July 4-31	3		
Canton	Sept. 18-24	1	1	
Chefoo	May 8-14			Present.
Foochow	May 8-Sept. 10			Do.
Hong Kong	May 8-Sept. 17	22	21	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-July 30	8		
Dairen	May 2-July 3	10	5	
Fushun	May 15-Sept. 17	11		
Harbin	June 13-July 10	4		
Kaiyuan	July 3-9	2		
Mukden	May 22-Oct. 1	7		
Pensihu	July 3-Oct. 1	2		
Ssupingkai	May 8-July 9	3		
Tientsin	May 8-Oct. 1	30	4	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 25, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Chosen	Feb. 1-July 30			Cases, 526; deaths, 211.
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr. 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr. 1-30	1		
Curacao	May 29-June 4	1		Alastrim.
Ecuador:				
Guayaquil	June 1-Aug. 31	4		
Egypt	May 7-Sept. 30			Cases, 21; deaths, 4.
Alexandria	May 21-June 17	4	1	
Cairo	Jan. 22-Apr. 15	14	3	
France	Apr. 1-Aug. 31			Cases, 207.
Lille	July 24-30	1		
Paris	May 21-July 31	14	2	
Gold Coast	Mar. 1-July 31	42	7	
Great Britain:				
England and Wales	May 22-Oct. 29			Cases, 3,999.
Birmingham	Aug. 14-Sept. 30	2		
Bradford	May 29-June 11	2		
Do	Oct. 23-29	1		
Bristol	Oct. 16-29	7		
Cardiff	June 19-July 2	4		
Do	Oct. 23-29	1		
Leeds	July 17-Oct. 29	24		
Liverpool	July 17-30	1		
London	May 15-June 18	2		
Manchester	Oct. 2-15	3		
Newcastle-upon-Tyne	June 12-Oct. 29	13		
Sheffield	June 12-Oct. 22	83		
Stoke-on-Trent	Aug. 21-27	1		
Scotland—				
Dundee	May 29-Sept. 3	6		
Greece	June 1-30	14		
Saloniki	July 12-Aug. 15		2	
Guatemala.				
Guatemala City	June 1-30		9	
Guinea (French)	June 4-10	9		
India	Apr. 17-Sept. 24			Cases, 77,885; deaths, 20,509.
Bombay	May 28-Oct. 1	248	158	
Calcutta	May 8-Oct. 8	416	318	
Karachi	May 15-Aug. 6	10	5	
Madras	May 22-Oct. 15	37	8	
Rangoon	May 8-Oct. 1	194	158	
India, French Settlements in	Mar. 20-Aug. 27	174	155	
Indo-China (French)	Mar. 21-Sept. 20			Cases, 332.
Saigon	May 14-Sept. 9	4	1	
Iraq:				
Baghdad	Apr. 10-Oct. 1	8	4	
Basra	Apr. 10-Sept. 17	9	8	
Italy	Apr. 10-May 21	13		
Rome	June 13-July 17	3		Including consular district.
Jamaica	May 29-Oct. 29	47		Reported as alastrim.
Japan	Apr. 3-May 7			Cases, 19.
Nagasaki City	June 20-Aug. 14	26	7	
Taiwan Island	May 21-31	1		
Java:				
Batavia	May 22-Oct. 8	10		
East Java and Madura	Apr. 24-Sept. 30	42	1	
Latvia	Apr. 1-30	1		
Mexico	Mar. 1-June 30			Deaths, 621.
Acapulco	Aug. 28-Sept. 17	2	2	
Durango	June 1-30		1	
Monterey	July 1-31	6	4	
San Luis Potosi	May 29-Aug. 13		11	
Tampico	June 1-July 31	1	2	
Torreon	Aug. 7-Oct. 1		2	
Morocco	Apr. 1-Aug. 31	283		
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in 2 localities.
Pasir Residency	Apr. 30-May 6			Epidemic outbreak.
Samarinda Residency	May 21-27			Do.
Nigeria	Mar. 1-July 31	2,844	653	
Paraguay:				
Asuncion	July 10-23		3	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 25, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Persia:				
Teheran	Feb. 21-July 23		16	
Poland	Apr. 10-Aug. 6	20	2	
Portugal:				
Lisbon	May 29-Oct. 8	26	1	
Oporto	Sept. 3-9	1		
Senegal:				
Medina	July 4-10	7		
Siam	Apr. 1-Oct. 1			Cases, 250; deaths, 67.
Bangkok	May 1-Sept. 10	16	8	
Spain:				
Madrid	Aug. 1-31		1	
Valencia	May 29-June 4	3		
Do	Sept. 25-Oct. 1	1		
Straits Settlements	June 12-18			Cases, 3.
Singapore	Apr. 1-June 18	7	2	
Sumatra:				
Medan	June 5-Aug. 20	3		
Switzerland:				
Berne	June 26-July 2	1		
Syria:				
Damascus	Aug. 11-Sept. 30	8		
Tunisia	Apr. 1-June 10			Cases, 10.
Tunis	June 1-10	1		
Union of South Africa:				
Cape Province	July 7-Aug. 20			Outbreaks.
Elliott district	May 11-June 10			Do.
Idutywa district	July 3-9			Do.
Kalanga district	May 11-June 10			Do.
Mount Ayliffe district	July 31-Aug. 6			Do.
Orange Free State	Aug. 7-13			Do.
Transvaal—				
Barberton district	May 1-7			Do.
Venezuela.				
Maracaibo	July 12-Oct. 3		4	

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-July 20			Cases, 399; deaths, 39.
Algiers	May 11-Oct. 20	34		
Oran	May 21-Aug. 31	34		
Argentina:				
Rosario	Aug. 1-31		1	
Bulgaria	Mar. 1-Aug. 10			Cases, 245; deaths, 21.
Sofia	June 4-Oct. 21	19		
Chile:				
Antofagasta	Apr. 16-May 31	1		
Do	Sept. 25-Oct. 1		1	
Concepcion	May 29-June 4		1	
La Calera	Apr. 16-May 31	1		
Ligua	Mar. 16-31	2		
Puerto Montt	Apr. 16-May 31	1		
Santiago	do	5	1	
Talcahuano	July 10-16		1	
Valparaiso	Apr. 16-Sept. 3	5	3	
China:				
Manchuria—				
Harbin	July 25-Aug 21	5		
Mukden	May 29-June 4	1		
Tientsin	July 10-24	3		
Chosen	Feb. 1-July 31			Cases, 793; deaths, 68.
Chemulpo	May 1-Aug. 31	3		
Gensan	do	4		
Seoul	Apr. 1-Aug. 31	35	3	
Czechoslovakia	do			Cases, 55.
Egypt	May 28-Sept. 30			Cases, 133; deaths, 22.
Alexandria	May 21-Aug. 5	13	5	
Cairo	Jan. 15-July 1	43	16	
Port Said	Sept. 24-30	1		
Estonia	Apr. 1-June 30			Cases, 5.
Greece	June 1-30	2		
Athens	June 1-July 31		9	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 25, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Guatemala:				
Guatemala	Aug. 25-31		1	
Iraq:				
Baghdad	Apr. 24-30	1		
Irish Free State:				
Cork County	July 3-9	1		In urban district.
Donegal County—				
Letterkenney	Oct. 16-22	4		
Latvia	Apr. 1-July 31	32		
Lithuania	Feb. 1-Aug. 31	365	50	
Mexico	Feb. 2-June 30			Deaths, 166.
Mexico City	May 29-Oct. 22	79		Including municipalities in Federal District.
San Luis Potosi	July 31-Aug. 6		1	
Morocco	Apr. 1-Sept. 20	981		
Palestine	May 24-Oct. 10			Cases, 32.
Haifa	do	10		
Jaffa	Aug. 2-Oct. 3	3		
Jerusalem	June 28-Aug. 15	8		
Mahnaim	May 17-23	1		In Safad district.
Nazareth	July 19-25	1		
Safad	May 17-Aug. 8	10		
Tel Aviv	Oct. 1-10	1		
Peru:				
Arequipa	Apr. 1-30		1	
Do	Aug. 1-31		2	
Poland	Apr. 10-Oct. 1	1,133	105	
Portugal:				
Lisbon	May 29-June 4	1		
Oporto	Aug. 20-27	1		
Do	Oct. 23-29	1		
Rumania	Apr. 3-Aug. 27	1,000	69	
Spain:				
Seville	Aug. 19-25		2	
Syria:				
Aleppo	Sept. 11-17	2		
Tunisia	Apr. 22-July 20			Cases, 158.
Tunis	July 5-Aug. 21	2		
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa	Apr. 1-30			Cases, 55; deaths, 8, native. In Europeans, cases, 2
Cape Province	Apr. 1-Oct. 1	42	5	
Albany district	June 5-11			Outbreaks.
East London	May 22-28	1		Do.
Glen Gray district	May 1-7			Do.
Kentani district	June 26-July 2			Do.
Port Elizabeth	Aug. 7-13	1		
Qumbu district	May 1-7			Do.
Umzimkulu district	June 23-July 2			Do.
Natal	Apr. 1-Aug. 6	7	3	
Impendhle district	June 5-11			Do.
Orange Free State	Apr. 1-Oct. 1	5		
Transvaal	Apr. 1-30	1		
Johannesburg	July 3-Aug. 20	19	5	
Yugoslavia	May 1-Aug. 31			Cases, 24; deaths, 5.

YELLOW FEVER

Ashanti:				
Obuasi	Aug. 6	1	1	
Dahomey (West Africa):				
Porto Novo	July 1	1	1	In Syrian woman.
Gold Coast	Apr. 1-June 30	60	22	
Do	Aug. 4	2		
Ivory Coast	July 29	1	1	
Liberia:				
Monrovia	May 29-Sept. 10	5	5	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to November 25, 1927—Continued

YELLOW FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Senegal	Oct. 3-16			Cases, 24; deaths, 18.
Dakar	July 9	1		
Do	Aug. 8		2	
Do	Sept. 17			Present.
Do	Oct. 3-16	12	7	
Geoul	Sept. 26-Oct. 2	1	1	
Island of Goree	Aug. 22-Sept. 4	2	2	
Kebemer	Oct. 9-16	1	1	
Kelle	do	2	1	
Khombole	Aug. 1-Oct. 9	6	3	
Louga	Sept. 26-Oct. 2	1	1	
M'Bour	May 27-June 19	5	5	
Quakam	June 2-Aug. 14	4	2	
Pout	Sept. 19-25	1	1	
Rufisque	Oct. 9-16	1	1	
St. Louis	Aug. 1-Oct. 2	3	3	
Thies	July 10	1	1	In European.
Do	Sept. 12-Oct. 16	10	10	
Tiaroye	Aug. 22-Sept. 4	1	1	
Tivaouane	May 27-Sept. 11	6	5	
Togoland:				
Meiatza	Aug. 15-21	1	1	
On vessel:				
S. S. Desirade	Sept. 16	1	1	At Leixoes, Portugal, in passenger from Dakar, Senegal.

X

TREASURY DEPARTMENT

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SPECIAL ARTICLES

Benzocaine-Chaulmoogra Oil in the Treatment of Leprosy

Spleens Palpable on Deep Inspiration as Malaria Index

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HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

ASST. SURG. GEN. R. C. WILLIAMS, *Chief of Division*

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PUBLIC HEALTH REPORTS

VOL. 42 DECEMBER 9, 1927 NO. 49

BENZOCAINE-CHAULMOOGRA OIL IN THE TREATMENT OF LEPROSY

Preliminary Note on the Use of an Oil-Soluble Analgesic Which Renders Intramuscular Injections of Chaulmoogra Oil Painless

By FREDERICK A. JOHANSEN, *Acting Assistant Surgeon, United States Public Health Service, United States Marine Hospital No. 66 (National Leprosarium, Carville, La.)*

Chaulmoogra oil has been used for centuries and extensively in the treatment of leprosy; that it has some virtue in this respect may therefore be accepted.

The methods of administration, of which there have been many, are not completely satisfactory. Oral administration is accompanied by nausea, making large doses intolerable to most lepers; the intramuscular injection of the crude oil and its refined products is painful and can not be borne by many lepers. The intravenous route is considered unsatisfactory, because of the danger of embolism and pulmonary irritation, as well as local irritation and final blockage of the veins used; furthermore, it is impracticable to permit unskilled assistants to administer by such routes.

With the purpose of compensating for the various difficulties, search was made for some analgesic which might be added to chaulmoogra oil to allay the pain incident to repeated hypodermatic injections. Various water-soluble analgesics used in emulsion with the oil appeared to be completely unsatisfactory in that the water-soluble analgesic was absorbed before the chaulmoogra oil, leaving the bulk of the oil as a tumor and resulting in muscle soreness. Among the oil-soluble analgesics, benzocaine appeared to fulfill the requirements of a nontoxic, nonhabit-forming local anesthetic which when thoroughly mixed with chaulmoogra oil should remain in suspension and be slowly absorbed along with the therapeutic agent.

Benzocaine-chaulmoogra oil and other formulæ injected subcutaneously into rabbits showed the benzocaine formula to cause the least local inflammation. Human experimentation was then undertaken to determine the minimum benzocaine required for satisfactory analgesia. It was further determined that the benzocaine was more

readily soluble in olive oil than in chaulmoogra oil, and the following formula was adopted:

	Parts
Chaulmoogra oil	90
Olive oil	10
Benzocaine	3

The United States Dispensatory describes aethylis aminobenzoas, U. S. (benzocaine), as follows:

Small white or colorless crystals, or a white crystalline powder. It is odorless, and is stable in the air. One gram of ethyl aminobenzoate is soluble in about 2,500 c. c. of water, 5 c. c. of alcohol, 2 c. c. of chloroform, 4 c. c. of ether, and in from 30 to 50 c. c. of expressed oil of almond or olive oil, at 25° C. It is soluble in dilute acids. * * *

Benzocaine is decomposed by prolonged boiling with water, but its oily solution can be boiled without change. It is incompatible with acids and acid salts.

Uses.—Ethyl aminobenzoate is remarkable among the local anesthetics, first for its comparative insolubility, and second for its lack of toxicity. Closson (Journ. Michigan State Med. Soc., 1914, XIII, 587) found that in oily solution, injected hypodermically, it required the enormous dose of 1.2 grams per kilo of body weight to kill the guinea pig, which would make it about one-twentieth as poisonous as cocaine. Kennel (B. K. W., December, 1902) has reported a case in which 40 grains were administered to a patient without apparent ill-effect. It also appears to be almost free of local irritating action, although the soluble salts that it forms with acids give rise to considerable irritation. According to the investigations of Closson, the anesthetic effect is almost entirely on the nerve terminals; that is, it has very little effect upon nerve trunks as compared, for example, to cocaine. Despite its sparing solubility, it is capable of passing through mucous membranes to a sufficient extent to lessen sensation. * * *

METHOD OF PREPARATION

Three grams of benzocaine are added to 10 c. c. of olive oil and mixed with a stirring rod; this is then added to 90 c. c. of chaulmoogra oil previously warmed on water bath to 70° C.; the oil mass is then agitated in a flask until all remaining crystals of benzocaine are dissolved. The mixture is filtered through filter paper and then heated on water bath at 100° C. for one hour. Benzocaine goes into solution without increasing the volume of the finished mixture.

After experimentation to determine dosage and the most appropriate regions for repeated injections it was ascertained that the maximum, average, comfortably tolerated dose was the semiweekly injection of 5 c. c. into the deltoid regions, alternating with 8 c. c. into the buttocks, and this was adopted as routine. Certain muscular lepers tolerated 15 c. c. twice weekly with no reported discomfort other than that to be expected from the size and pressure of the mass of oil.

It was found that the oil was completely absorbed within 48 hours in the majority of patients, and rarely any evidence of the injection was noted after the third day.

The mixture is best given at body temperature, as this allows the oil to pass freely through a medium-sized needle, thus giving only a minimum of pain from the puncture.

REPORT OF CASES

On March 15, 1927, 24 patients were selected for treatment, and these patients have taken the injections consistently for six months. Of the 24 cases, there were but 6 who complained of any after effects other than the muscle soreness from the injection, such as any inert foreign material would cause.

Three abscesses developed (0.2 per cent of total injections), and these were incised and promptly healed. In three instances an indurated mass developed which remained highly inflamed for three days and subsided within five days without surgical interference and with a minimum of pain.

Treatment was started in one additional leper who apparently has a chaulmoogra oil intolerance. Minute injections of the benzocaine-chaulmoogra oil mixture caused inflammatory masses in this patient which were exquisitely tender, and no further treatment was attempted.

Of these 24 lepers (Table 1), 6 were markedly improved by the discontinuance of evanescent tubercles, the healing of ulcers, the reduction of size or complete disappearance of nodules, and the betterment of the general health. Twelve were moderately improved in that there was a reduction in attacks of leprous fever with coincident outcroppings of evanescent tubercles, a healing of small ulcers, a diminution in size of semipermanent lesions, and some improvement in the general health. Five were slightly improved in that progression of their leprous lesions had subsided and there was slight diminution in leprous nodules, with gradual fading of macules. One remained unchanged. This patient is a robust, hardy individual who had very little evidence of the disease when treatment was started.

TABLE 1.—*Results of treatment with benzocaine-chaulmoogra oil mixture*

Type	Number of cases	Marked improvement	Moderate improvement	Slight improvement	Unchanged	Worse
Anesthetic, active early	1	1	0	0	0	0
Anesthetic, active advanced	1	0	1	0	0	0
Nodular, active early	5	1	2	2	0	0
Nodular, moderately advanced	4	1	3	0	0	0
Nodular, advanced	6	[1] 2	4	0	0	0
Mixed, active early	2	0	1	0	1	0
Mixed, moderately advanced	1	0	0	1	0	0
Mixed, advanced	4	1	1	2	0	0
Total	24	6	12	5	1	0

[1] After completion of this report 1 patient died after a few days' illness from acute cardiac complications.

ILLUSTRATIVE CASES

Case 1–384.—Male, Mexican, 34 years of age, active advanced, nodular type. At time treatment was started had a marked pharyngitis and laryngitis from leprous ulcerations, consequent dysphagia and dysphonia; many nodules over the body; on his face the nodules were confluent, giving a leonine countenance. General physical condition very poor, no appetite, and low morale.

Six months after beginning treatment, many of the smaller leprous ulcers in the mouth and pharynx have healed, leaving only slight evidence of one larger ulcer. Voice greatly improved and patient can speak in a more nearly normal tone. General health markedly improved, appetite good, muscular strength greatly increased, and morale excellent. Many of the nodules over body have completely disappeared and those on face have become smaller and softer in consistency. Weight has been stationary. It should be noted that daily applications of ultra violet have been made to throat coincident with the benzocaine-chaulmoogra oil treatment. (Footnote in table refers to this patient.)

Case 3–429.—Female, white, American, 66 years of age, active early anesthetic type. Complained of neuritis in both arms. Ulcer on plantar surface of right foot which had responded to no previous treatment; there were numerous bright red macules over both legs and right hip.

After six months' treatment, has no evidence of neuritis; ulcer of right foot has completely healed for the first time in over four years; macules of legs and hip have entirely disappeared. General health excellent and has no evidence of leprous activity, and in two recent monthly bacterioscopic examinations no *Bacillus leprae* found. Gained 3 pounds in weight.

Case 8–352.—Male, Mexican, 26 years of age, active advanced nodular type. Had outcroppings of evanescent tubercles constantly; suffered with severe neuritis in legs and arms; feet and hands edematous; many suppurating tubercles. Resistance very low and general health wretched; acute exquisitely painful iritis of left eye. Shortly after starting treatment was bedfast with nephritis and ascites and missed eight injections. (Plate I, fig. 2.) One year previous to starting this treatment patient was in comparatively good health, with very little activity of the disease. (Plate I, fig. 1.) Six months later he began to decline rapidly and lesions became very active.

After six months' treatment, general health much improved; smooth cicatrices remain as evidence of old ulcerating tubercles. Has had no neuritis or tubercles within past three months; iritis completely disappeared. (Plate I, fig. 3.) Gain in weight, 23½ pounds.

Case 14–391.—Female, white, American, 22 years of age, active early nodular type. Complained of gradual increase of small nodules, many of which were ulcerating. Over the face were numerous small discrete nodules distributed principally over chin, cheeks, forehead, and ear lobes (Plate II, fig. 1); also many nodules over arms and legs. Diffuse thickening of skin over face and forearms. brownish-red pigmentation over forehead, cheeks, chin, chest, arms, thighs, and legs. Anesthesia of both legs below knees and of little finger of both hands. Had marked scleroderma of both legs (Plate III, fig. 1) and an ulcer on inner surface of the right leg. Pharyngitis and laryngitis with slight dysphonia.

After six months' treatment, many of the nodules over face (Plate II, fig. 2), arms, hands, and legs have decreased in size and many have completely disappeared. The brown pigmentation over face, chest, arms, and legs (Plate III, fig. 2) has faded noticeably and remains as a light tan. All ulcerating nodules have completely healed. The huskiness of voice has completely cleared. Sensation in feet and hands noticeably improved; has much greater muscular strength; sleeps well, and has a good appetite; morale excellent. Gain in weight, 8 pounds.

Fig 1 —March 17, 1925 Numerous small discrete and confluent nodules scattered over face; general health excellent

Fig. 2 —March 1, 1927. Leprosy unchanged; edema of hands and feet; general health poor

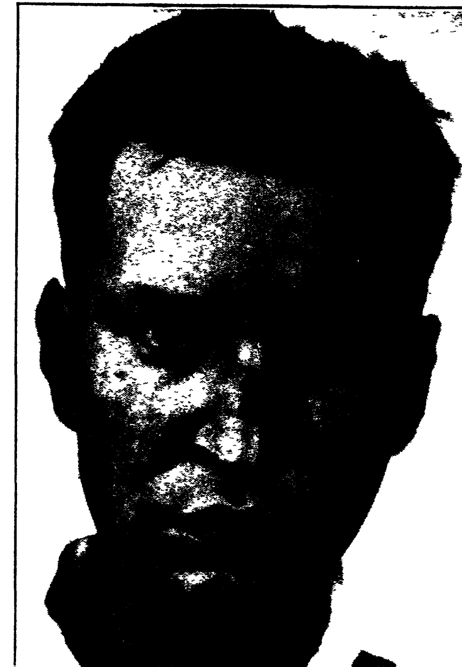

Fig. 3 —October 7, 1927. Many small nodules have disappeared; some larger ones reduced in size; general health excellent

Fig. 1 —November 12 1925   Numerous small, almost confluent, nodules scattered over entire face

Fig 2 —October 9, 1927   Reduction in size and number of nodules; considerable smoothing of lips

Fig. 1.—March 1, 1927. Marked scleroderma with considerable pigmentation

Fig. 2.—October 9, 1927. Scleroderma and pigmentation less marked

 Case 24-83

PLATE IV

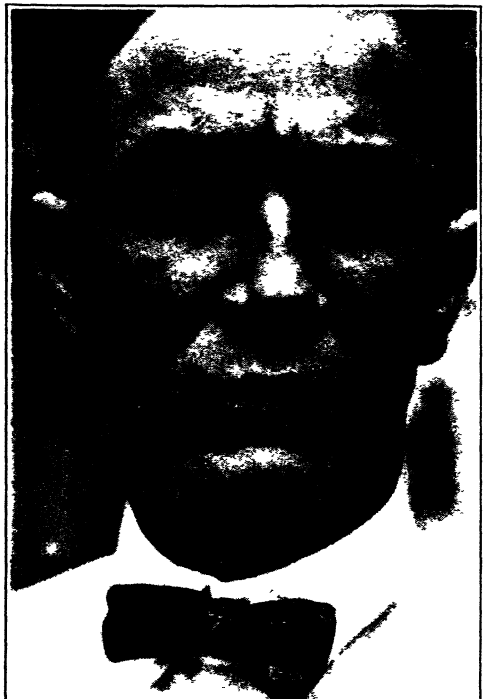

Fig. 1 —August 3 1924 Slight evidence of leprosy, some loss of eyebrows; general health excellent

Fig 2 —March 1, 1927 Considerable general infiltration of entire face, erosion of ear lobes and saddle nose, and marked photophobia, general health poor

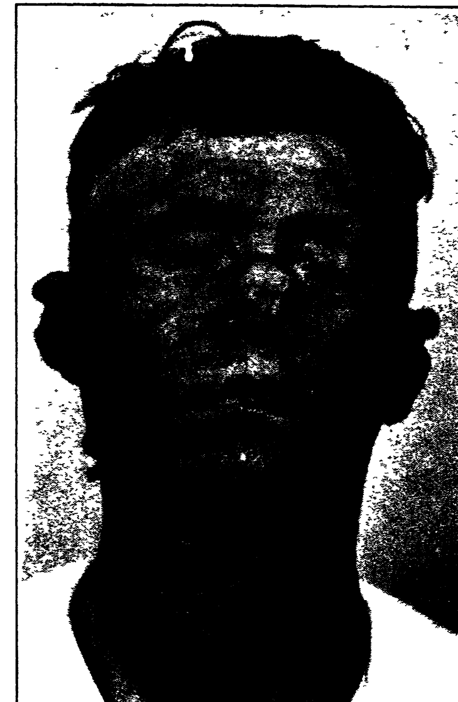

Fig. 3 —October 9 1927 Retrogression arrested; some nodules have disappeared; less photophobia; general health good

Fig. 1.—March 1, 1927. Marked scleroderma of both hands

Fig. 2.—October 9, 1927. Hands smooth, with almost no scarring

Case 23–207.—Male, white, American, 23 years of age, active, early, nodular type. Had been suffering incessantly with neuritis in both knees and elbows and periodic attacks of evanescent tubercles. General condition unsatisfactory, poor appetite, no initiative, and much muscular weakness. Several small nodules over legs and considerable thickening of skin over face, hands, arms, and legs.

After six months' treatment, general health markedly improved; muscular strength greatly increased; has considerable energy; morale excellent. Has had no evidence of neuritis or evanescent tubercles since first month of treatment, the first time in two years. Gain in weight, 6 pounds.

Case 24–83.—Male, white, American, 27 years of age, active, advanced, nodular type. (Plate IV, fig. 2.) General condition extremely poor; suffered greatly from iritis of both eyes and neuritis in both legs. Almost never free from evanescent tubercles, many of which were ulcerating; both ears, hands, arms, and legs swathed in bandages. (Plate V, fig. 1.) Entire body covered with brown pigmentation. Two years previous to beginning this treatment patient was in very good physical condition (Plate IV, fig. 1), being an orderly in the hospital, and it was at this time that he began a decline until six months ago, when he was apparently tending toward dissolution.

After six months' treatment, patient shows marked improvement in general health and in lesions (Plate IV, fig. 3); appetite and strength greatly increased and has been completely free from neuritis. Iritis almost disappeared and has suffered no pain in the eyes for the past three months. No ulcerations on any part of body (Plate V, fig. 2), these having begun to heal soon after starting treatment. Weight stationary.

SUMMARY

Crude chaulmoogra oil in combination with benzocaine dissolved for convenience in olive oil has been injected into 24 lepers in comparatively large doses twice weekly over a period of six months, with a negligible amount of pain, slight discomfort from pressure, and only a few oil abscesses (0.2 per cent, such as are not infrequently encountered when an oil is injected intramuscularly).

This preparation has the advantage of not causing pain and of absorbing readily, thereby giving the patient a uniform amount of chaulmoogra oil over a definite period of time.

Of the 24 cases, 6 showed marked improvement; 12 showed moderate improvement; 5 showed slight improvement; 1 was unchanged, and none became worse.

COMMENT

The contributor is well aware that temporary improvement may take place in lepers coincident upon the administration of any new treatment; retrogression usually follows in inverse ratio. In this experiment the enthusiasm of the patients is progressive and there is not the frequent complaint that the cure is worse than the disease.

Since the treatment was started, 36 patients have been added, making a total at this time of 60 who are taking the injections semiweekly as routine treatment.

In reporting these cases no claim is made that the injection of chaulmoogra oil with benzocaine will cure leprosy. It is felt, however, that the method suggested is worthy of further use, and this preliminary report is submitted for such consideration and trial as may seem appropriate.

The use of benzocaine in gastric ulcer for relief of pain and vomiting when due to gastric irritation, and its use in counteracting the emetic effects of antimony (United States Dispensatory, twenty-first edition), presented the suggestion that its use with chaulmoogra oil for oral administration might allay the gastric irritation coincident in many patients with this form of medication. At the present time this experiment is being carried out with encouraging results, a report of which will be submitted at a later date.

ACKNOWLEDGMENTS

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ON THE SIGNIFICANCE OF SPLEENS PALPABLE ON DEEP INSPIRATION IN THE MEASUREMENT OF MALARIA

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Malariologists have generally held with Ross (1911) that widespread splenomegaly (enlarged spleens in excess of 1 or 2 per cent of those examined) is due to malaria—in the absence of kala azar. In assuming this point of view they have interpreted the word "splenomegaly" as meaning a spleen "enlarged sufficiently to be easily detected by the fingers passed under the ribs on the left side—and anyone, hospital assistants, nurses, and laity, can detect it" (Ross (1911) p. 220). At the same time it was recognized that "the spleen of healthy infants is sometimes so easily palpable that the unskilled observer may think that it is enlarged."

In palpating for enlarged spleens as an index of malaria infection in southern United States, Barber and Coogle (1921), Maxcy and Coogle (1923), Veldee (1923), Barber, Komp, and Hayne (1926), and Coogle (1927) have used a method similar to that advocated by Ross, Christophers, and their coworkers (1911, 1914, 1915) in India. The subject was examined standing; the spleen was considered enlarged if the edge could be plainly and definitely outlined at or

below the costal margin, and could be demonstrated to any other physician who happened to be present.

The least degree of enlargement recorded with this method, then, corresponded with Class II of the central committee in India—"palpable or one finger's breadth below the costal margin"—Class I being "not palpable" (Christophers, 1911).

In the examination of school children in many parts of southern United States it was found that in some areas where malaria was supposed to exist the spleen rate was not more than 1 or 2 per cent, and the parasite rate was correspondingly low. On the other hand, in certain areas definitely malarious, spleen rates varying up to 25 or 30 per cent were demonstrated with parasite rates of the same order. The common experience in malarious sections in this country, however, was to find a low spleen rate, ranging around 5 to 10 per cent—and a parasite rate of about the same range—wherever a large group of children was taken into consideration.

Recently the hypothesis was advanced (Darling (1924, 1925, 1926)) that, in view of the light endemicity of the disease in southern United States, the technique of spleen examination should be made as delicate as possible to detect the least degree of splenic enlargement. Using such a technique a proportionately large number of the spleens palpated fell into a newly created classification of "spleen just palpable on deep inspiration." This class of spleens was thought to be just as significant in the measurement of malaria as the spleens palpable below the costal margin.

The validity of this hypothesis was questioned by the authors. It seemed possible, in the first place, that if the method of spleen examination be made sufficiently delicate, a certain number of normal spleens would be felt, not only in infants, but also in the higher age groups. That such is actually the case has already been indicated by the work of Zamkin (1926) in New York City. Second, the work of Oudendal (1925), "An Enquiry into Spleen Palpation, Based on the Weight, Situation, Shape and Dimensions of the Enlarged Spleen in Post Mortem," suggests very strongly that *a palpable spleen is not necessarily enlarged* and vice versa, that many enlarged spleens are not palpable. In the third place, it seemed possible that common diseases which had not hitherto been taken into account by malariologists, might cause slight degrees of enlargement, or render spleens more easily palpable, for a short period of time after recovery. This is true of at least one very common contagious disease, measles, according to Fort (1926) and Bleyer (1926 and 1927).

The observations herewith reported were undertaken with a view to evaluating under field conditions the more delicate method of spleen palpation in the measurement of malaria.

METHODS

The more delicate method of spleen examination suggested (Darling, 1926) was as follows:

> * * * place the child to be examined in a recumbent position with the thighs and legs flexed and with the head to the examiner's left. The clothing should previously be loosened so that the hand or fingers of the examiner may be easily and freely placed upon the bare skin of the abdomen. If the spleen is not palpable the child is instructed to take a deep breath. With the tips of the fingers of the right hand held just below the costal margin, slight pressure is made as the child takes a deep breath. At this moment, if the spleen is enlarged, it may be felt descending, being pushed down by the diaphragm. It is important that the child draw a full breath, and care must be taken not to press too deeply, for tension on the abdominal wall will prevent the spleen from being felt as it moves under the tips of the fingers.

Using this method, all of the spleen examinations reported in this paper, except as noted, were made by the same individual in order that the personal factor might be held constant. In like manner, all of the examinations of blood smears for malarial parasites were made by the same individual, using the same thick smear technique throughout.

The following classification has been used to express the result of spleen examination:

Class I. Negative—not palpable.

Class II. Tip palpable on inspiration.

Class III.—Palpable—at costal margin on normal respiration but not more than one finger's breadth below

Class IV.—Palpable—more than one finger's breadth below costal margin.

Class IV has not been defined further, because the very large spleens extending down toward the umbilicus or beyond are so rare in this country as to form a very small group. This study is concerned with the significance in the measurement of malaria of Class II.

RESULTS

In a series of preliminary examinations of school children in Leflore County, Miss.—a malarious section—an attempt was made to gauge the difference in the percentage of positive spleens found by this more delicate method of examining the child lying down and thoroughly relaxed, and that found by making the examination with the child in the standing position. It was found very difficult, however, to eliminate bias if the same individual examined the same children by both methods; and if one individual was examined by one method and another by the other, it was impossible to hold the personal factor constant. This comparison is, therefore, not given in detail, since it is not considered statistically accurate. It became evident, however,

that though occasionally in the examination of children standing a spleen was detected which was missed when the child was lying down, the balance was generally in the opposite direction. From 10 to 20 per cent more spleens were palpable with the children lying down and thoroughly relaxed. The difference was almost entirely in those spleens which were barely palpable on deep inspiration (Class II), as would have been expected.

The observations presented herewith in tables were made with a view to ascertaining what the spleen rates would show when the more delicate method was used (1) in a malarious section, and (2) in a nonmalarious section.

1. OBSERVATIONS IN A MALARIOUS DISTRICT (LEFLORE COUNTY, MISS.)

(*a*) *Comparison of urban and rural school children.*—Although malaria is lightly endemic throughout the rural districts of Leflore County, in the urban district immediately surrounding the city of Greenwood (population 7,793 in 1920), previous observations over a period of years have indicated that there is comparatively little, if any, transmission of malaria. Such cases as occur in this urban district are, for the most part, relapses or imported infections. The spleen examinations were made in every instance with the child lying down. In Table 1 the spleen and blood findings in children of schools located in the rural, presumably malarious, sections of the country are compared with those of the two urban schools, white and colored, in the city of Greenwood.

TABLE 1.—*Summary of spleen and blood rates in school children, Leflore County, Miss., 1926*

Race and district	Month, 1926	Spleen		Blood	
		Number examined	Per cent palpable, all classes	Number examined	Per cent positive
White:					
Urban	April	115	25.2	29	0
	October	106	26.4	106	3.8
Rural	April	133	26.4	172	1.2
	October	131	25.2	131	2.3
Colored:					
Urban	April	86	11.6	10	0
	October	101	7.0	101	2.9
Rural	February	283	14.5	26	[1] 26.9
	April	66	16.6	60	8.3

[1] Blood smears taken only from children having palpable spleens.

It will be noted in this table (1) that the spleen rate is out of all proportion greater than a parasite rate based upon thick blood smears and carefully examined; (2) that in the same group of children there was little difference in the spleen rate recorded in the spring (low season) from that found in the fall at the conclusion of the active period of transmission in this country, when the spleen

rate should, theoretically, be maximum; (3) that the spleen rate is uniformly higher in the white children than in the colored, although the latter are known to be more highly infested, as is indeed indicated by the parasite rates here obtained.

(b) *The spleen classification of the urban and rural groups.*—In order to ascertain to what extent these differences, or lack of differences, were due to the more delicate method of spleen examination, the palpable spleens have been arranged according to class in Table 2. It is evident that spleens "palpable on inspiration" (Class II) form by far the larger group, so large indeed as to obscure any differences which would be revealed by the more definitely pathological spleens palpable at, or below, the costal margin (Class III and Class IV). If attention be confined to the latter groups (leaving out of consideration Class II) it appears that the definitely enlarged spleens are more common in rural than in urban school children, and particularly in the colored rural, although the numbers are too small for statistical comparisons.

TABLE 2.—*Spleen classification of school children examined while lying down, Leflore County, Miss., 1926*

School	Date, 1926	Number examined	Number with spleen negative Class I	Number with spleen palpable— Class II—on inspiration	Class III—At costal margin	Class IV—Below costal margin	Per cent palpable, all classes
White urban: Greenwood	April	115	86	24	5	0	25.2
	October	106	79	25	2	0	25.2
White rural.							
Swiftown	February	69	50	17	1	1	27.5
	April	59	38	18	3	0	35.6
	October	40	21	12	7	0	47.5
Money	February	29	21	5	1	2	27.6
	October	22	17	4	1	0	17.2
Morgan City	October	52	45	2	5	0	13.4
Long Shot	April 13	18	14	1	2	1	22.2
	April 21	22	13	7	2	0	40.1
	October	6	6	0	0	0	0.0
Litton	April 13	17	14	2	1	0	17.6
	April 21	51	38	11	2	0	25.5
	October	11	9	0	2	0	18.2
Colored urban: Greenwood	April	86	77	8	1	0	14.6
	October	101	94	6	1	0	7.0
Colored rural:							
Swiftown	February	63	53	6	1	3	15.8
Browning	February	39	33	3	1	2	15.4
Big Sand	February	17	16	1	0	0	5.9

(c) *Correlation of spleen classification with blood findings.*—Bringing together the figures for all of the schools in which the spleen classification was recorded and blood smears were taken on all of the children examined, in order that the groups might be made as large as possible for comparison, the correlation of blood findings with the spleen classification is shown in Table 3.

TABLE 3.—*Correlation between spleen classification and the finding of parasites in blood smears, Leflore County, Miss., 1926*

Race	Spleen negative Class I			Spleen palpable									Total
	Number	Blood positive		Class II—On inspiration			Class III—At costal margin			Class IV—Below costal margin			
		Number	Per cent	Number	Blood positive		Number	Blood positive		Number	Blood positive		
					Number	Per cent		Number	Per cent		Number	Per cent	
White	375	5	1.3	130	4	3.1	26	2	7.7	3	0	0.0	534
Colored	226	18	7.9	32	6	18.7	2	2	100.0	1	1	100.0	261
Total	601	23	3.8	162	10	6.2	28	4	14.3	4	1	25.0	795

The blood rate of 601 children whose spleens were not palpable (Class I) was 3.8 per cent. Out of 194 spleens which were palpable, approximately 83 per cent fell into Class II, "palpable on inspiration." For the 162 children in this class the rate was 6.2 per cent—slightly higher than for those in Class I; yet it is evident that Class II contains an indefinite number of children who are not suffering from acute or chronic malaria. This is shown by comparison with the group of 32 children whose spleens were easily palpable (Class III and Class IV), in which examination of a single thick smear revealed 15.6 per cent with malarial parasites in the peripheral blood.

(*d*) *Correlation of palpable spleen with a history of malaria.*—Could it be possible that the children with barely palpable spleens were suffering with malaria masked by the liberal use of quinine and "chill tonics"? It seemed that some light might be thrown on this point by visiting the homes of a large number of the children who had been examined in the schools to ascertain as far as possible whether the history of a previous attack of malaria was more common in the children with palpable spleens as compared with those without. Field workers visited the homes of 369 colored children and 233 white.[1] Careful inquiry was made regarding the illnesses which the child had had. Besides malaria, a record was made of the history of the occurrence of other common contagious diseases. The results are shown in Table 4.

[1] The authors desire to express their appreciation to Mr. T. B. Hayne for data collected in this can'

TABLE 4.—*Correlation of palpable spleens with history rates of malaria and common infectious diseases in school children, Leflore County, Miss., 1926*

Spleen class group	Total number	Per cent of total number in group with previous history of—											
		Malaria		Influenza		Scarlet fever		Chicken pox		Typhoid fever		Whooping cough	
		At any time	During 1925 and spring of 1926	At any time	During 1925 and spring of 1926	At any time	During 1925 and spring of 1926	At any time	During 1925 and spring of 1926	At any time	During 1925 and spring of 1926	At any time	During 1925 and spring of 1926
II, III, and IV, spleen palpable	138	62.3	27.5	58.7	8.0	2.2	0.0	43.5	11.6	2.9	0.7	66.7	2.2
I, spleen negative	464	56.0	20.9	52.6	7.0	3.0	0.4	34.9	7.3	3.7	0.0	53.0	6.9

In this table all the children with palpable spleens (Classes II, III, and IV) are grouped together and compared with the group (Class I) in which the spleen could not be felt. The fact that the former group is dominated by the 83 per cent belonging to Class II, "palpable on inspiration," should be borne in mind.

The percentage of children with a palpable spleen who gave a history of malaria during the preceding year was 27.5 per cent; with spleen negative, was 20.9 per cent. The difference is in the direction expected, but surprisingly small. Moreover, a difference equally great is found in the percentage of children with palpable spleens who have had chicken pox as compared with the history of this disease in the spleen negative group, and yet chicken pox is not characterized by the production of splenomegaly. If a large proportion of the palpable spleens were due to malaria which could not be demonstrated by blood smears on account of the use of quinine, then a much higher malaria history rate would have been expected in this group as compared with the spleen negative group.

In addition to the above considerations repeated blood examinations of the same children in a few selected schools failed to increase appreciably the percentage of positives. The evidence obtained by blood examination and inquiry into the previous history of malaria suggests, therefore, that a large proportion of the spleens which were palpable, especially those in Class II, were not due to "masked malaria" but to other causes.

Correlation of palpable spleen with a history of measles.—In view of the work of Fort (1926) and Bleyer (1926) careful inquiry was made into the history of measles during the canvass mentioned above, and these data have been tabulated separately in Table 5. Of 138 children whose spleens were palpable, less than 8 per cent gave a history of measles within the preceding year, and the rate for this

group is not significantly higher than the group of children whose spleens were not palpable. It does not appear, therefore, that measles could have played an appreciable rôle in the large percentage of children found to have palpable spleens.

TABLE 5.—*Analysis of measles history of children with palpable spleens and those without, Leflore County, Miss., 1926*

Group	Total number	Per cent of total number in group with previous history of measles						
		At any time	During month of examination	During month preceding examination	During 2 months preceding examination	During spring of 1926	During 1925	Before 1925
Classes II, III, and IV—Spleen palpable	138	60.8	0.0	0.7	0.7	1.4	5.1	52.9
Class I—Spleen negative	464	57.7	0.2	0.2	0.2	0.4	2.6	54.1

2. OBSERVATIONS IN A NONMALARIOUS DISTRICT (WASHINGTON, D. C., AND HAGERSTOWN, MD.)

The results of the examinations in Leflore County, Miss., left considerable doubt in our minds as to the significance of spleens "palpable on inspiration" in the measurement of malaria. As a control over the observations made on school children in this malarious district, spleen examinations were made on similar groups in two nonmalarious areas.[1]

(*a*) *Washington series.*—In Table 6 is shown the result of the examination of 193 white children living in Washington, D. C., June to August, 1926. So far as is known that city is entirely free from endemic malaria, and has been for a number of years. The children examined were applicants for admission to fresh-air camps, and came from four different sections of the city. In 29, or 15 per cent of these children, the spleen was palpable. All of the palpable spleens except 3 would fall into the class described as "palpable on inspiration." The remaining 3 were easily palpable below the costal margin, but not more than one finger's breadth. One of these children was just erupting with measles, another had had measles two months previously; in the third the enlarged spleen was due to an undetermined cause.

Of the 29 children with palpable spleens, only 7 gave a history of measles within the preceding six months. So far as could be ascertained, the other 22 were normal, healthy children who had had no contagious or infectious disease within the preceding year.

[1] The authors wish to express their appreciation to Surg. Grover Kempf for the privilege of examining the school children in Hagerstown, Md., and to Dr. J. A. Murphy, of the District health department, for examination of the Washington group.

TABLE 6.—*Spleen examinations of 193 children applying for admission to the fresh-air camps, Washington, D. C., June to August, 1926*

Age	Boys		Girls		Both	
	Number examined	Number with palpable spleens	Number examined	Number with palpable spleens	Number examined	Number with palpable spleens
5	6	2	6	0	12	2
6	15	3	8	2	23	5
7	9	2	10	2	19	4
8	12	1	10	2	22	3
9	4	0	19	3	23	3
10	13	3	14	1	27	4
11	19	3	14	2	33	5
12	16	2	18	1	34	3
Total	94	16	99	13	193	29

(*b*) *Hagerstown series.*—In like manner 215 school children living in Hagerstown, Md., were examined in May, 1926. Malaria is unknown in that section of the State. In 25, or 11.6 per cent, the spleen was palpable. In all instances except one the spleen was "just palpable on deep inspiration." In a single instance the spleen was palpable below the costal margin with normal respiration, but did not project more than one finger's breadth.

There had been no measles epidemic in this community within the year preceding, and none of the children with palpable spleens gave a history of measles within the nine months preceding the examination. So far as could be judged they were normal, healthy school children.

TABLE 7.—*Spleen examinations of 215 school children at Hagerstown, Md., May, 1926*

Age	Boys		Girls		Both	
	Number examined	Number with palpable spleens	Number examined	Number with palpable spleens	Number examined	Number with palpable spleens
6	13	2	12	5	25	7
7	16	3	15	3	31	6
8	14	2	17	1	31	3
9	17	2	15	1	32	3
10	18	0	15	2	33	2
11	16	2	16	0	32	2
12	15	2	16	0	31	2
Total	109	13	106	12	215	25

Combining both series of observations it appears that in a non-malarious locality, using the more delicate method of spleen palpation, with the child reclining and thoroughly relaxed, the tip of the spleen is palpable in about 13 per cent of children ranging in age from 5 to 12 years. The rate is highest in the lower ages and decreases as the age increases. These findings are in accordance with those of Zamkin (1926).

DISCUSSION

The observations here reported have led to doubt as to the value of refining the technique of spleen examination. There is much evidence to indicate that in the spleen classification "tip just palpable on inspiration" are included many normal spleens. The fact that a spleen is palpable does not of necessity indicate that it is pathologically enlarged. Evidently in early life, long beyond the period of infancy, the tip of the spleen can be felt in a progressively decreasing percentage of children, if sufficient care and skill be applied in the examination.[1] After measles and possibly other of the common infections, the spleen may be slightly enlarged, or at least more palpable than previously. In the measurement of malaria, if this group of spleens be included in the rate which is obtained, useful comparisons are obscured.

On the other hand, if dependence be placed in the cruder method of examining children standing, making no attempt to discover those spleens which are "just palpable on inspiration," one is likely to miss a few spleens which are enlarged as the result of malaria. There is an imponderable error.

It would seem desirable, in order that one may be as accurate as is consistent with the method, to use the more delicate technique if field conditions permit, classifying separately those spleens with tip just palpable on deep inspiration. It is equally obvious that the malaria field worker should be aware of the significance or lack of significance of this class of spleens. Probably the best plan is for each worker to control his spleen technique by examining a large number of children in a nonmalarious locality for comparison with his results in a malarious locality.

So far as spleens which are easily palpable on normal respiration at the costal margin or below are concerned, the same significance applies in the United States as has been found to apply in the very extensive observations which have been conducted in tropical countries. There are a sufficient number of such spleens in many sections of our malaria belt to make a rate, based on these, large enough to be statistically significant. It is this group of spleens which are of value in the measurement of malaria.

As in this country, so in most parts of Europe, malaria has a low endemicity, a short seasonal prevalence, and the use of quinine is general. The spleen rate is correspondingly low. In 1920 an attempt was made [2] in some parts of the Netherlands to overcome the difficulty by arranging to examine the children while they were lying down, with proper attention given to detail. The result was considered

[1] The control groups reported in this paper were white children. It does not necessarily follow that the same proportion of spleens are palpable in colored children of the same age groups.

[2] Second General Report of the Malaria Commission, League of Nations, Geneva, 1927.

unsatisfactory and the method abandoned because it was thought to be "tedious" when applied on a large scale, and because the deductions drawn from such low spleen indices might be erroneous. Distinctions of the type recorded above were not considered.

SUMMARY

In the United States where malaria is lightly endemic and there is a widespread use of quinine, the spleen and blood rates are low in comparison with tropical countries. If the technique of spleen examination be made more delicate, there are included with the definitely pathological spleens a large number of normal spleens which are just palpable on inspiration, and spleens slightly enlarged or rendered more palpable by a recent infection, such as, for instance, measles. The inclusion of this class of spleens tends to obscure comparisons which may be made of the malaria spleen rate in different population groups. It is the spleens which are easily palpable at the costal margin or below, on normal respiration, which are of significance in the measurement of malaria. Field workers should control their spleen technique by observations made in a nonmalarious locality, and show the spleen composition or classification in all examinations made in malarious localities.

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FLUCTUATION OF THE DIABETES DEATH RATE IN BOSTON

In the Monthly Bulletin for October, 1927, issued by the health department of the city of Boston, Frederick L. Hoffman, consulting statistician of the department, notes a reduction in the number of deaths from diabetes in Boston during the first six months of 1927 (104) as compared with the corresponding period of 1926 (123). This is equivalent to a reduction in the annual death rate for diabetes from 31 to 26 per 100,000 population. This latter rate is still much higher, however, than that for the registration area, 16.6 in 1924 and 16.9 in 1925, and above the average rate for large cities in 1925, namely, 19.2. Many deaths from diabetes in Boston hospitals occur in nonresidents who have come there for treatment with the disease far advanced; but even excluding these deaths there still remains an excess in the Boston death rate for diabetes which must be attributed to other factors as yet undetermined.

The mortality rates per 100,000 population for diabetes in Boston from 1915 to 1926 are given as follows:

1915	26.15	1919	22.80	1923	24.27
1916	25.73	1920	23.29	1924	23.68
1917	19.82	1921	19.66	1925	21.19
1918	17.80	1922	29.05	1926	26.17

In commenting on these rates Mr. Hoffman states:

"A striking fact of this table is the low death rate from diabetes during the war year 1918 and during the year of industrial depression of 1921. During both of these years food consumption was unquestionably much reduced in proportion to the population. In a recent address of mine on cancer and overnutrition, I have included some data as regards the per capita sugar consumption in the United

States which has increased from 79.7 pounds in 1909 to 83.2 pounds in 1912 and to 116.3 pounds in 1924. It is probable that during the last two years there has been a further increase which may well arrest attention. Sugar consumption in the United States is much above the average for many other countries and the results of excessive consumption are apparently traceable in our higher death rate from diabetes, which is far above the average for all civilized countries combined. This fact was clearly brought out some 10 years or more ago by Mr. Knud Stouman in an address delivered before the American Public Health Association."

Whatever the factors involved, the drop shown in the Boston death rate for diabetes during the war year of 1918 is also found in the rates for the general population in the registration area and for the industrial policyholders of the Metropolitan Life Insurance Co. In both of these groups, however, the lowest rate for the 11-year period is not for 1918 but for 1919, as shown in the following table:

Death rates for diabetes per 100,000 population

Year	Boston	United States registration area	Industrial insurance department, Metropolitan Life Insurance Co.	Year	Boston	United States registration area	Industrial insurance department, Metropolitan Life Insurance Co.
1915	26.15	17.5	15.1	1921	19.7	16.8	15.5
1916	25.73	17.1	15.9	1922	29.0	18.4	17.2
1917	19.82	17.0	15.3	1923	24.3	17.9	16.2
1918	17.80	15.9	14.0	1924	23.7	16.6	15.1
1919	22.80	14.9	13.4	1925	21.2	16.9	15.5
1920	23.3	16.1	14.1	1926	26.2	---------	17.0

Attention is called by Mr. Hoffman to the fact that the first indications of diabetes are usually revealed by a urinalysis indicating abnormal quantities of sugar in the urine, and he emphasizes the importance of having periodic examinations made by competent persons. Early detection and treatment of the condition by dietary and other measures are of the greatest importance in reducing the severity of the disease and prolonging life.

CROSS CONNECTIONS HELD RESPONSIBLE FOR THREE TYPHOID OUTBREAKS

Recent typhoid fever outbreaks in three New York cities, "all presumably the result of illegal cross connections between public water supplies and polluted supplies," are reported in the Health News for November 21, 1927, issued by the New York State Department of Health.

The largest of the outbreaks was in the city of Cohoes, where 42 cases were reported. Two of these were contact cases, but for the remainder there was no apparent common cause other than the city water supply. All of the cases were in one section of the city, and an investigation revealed in an industrial plant a defective cross connection between the public water supply and water from the Mohawk River, which receives untreated sewage from Schenectady. *B. coli* was found in the water in the public mains in the affected section, whereas no evidence of pollution was found in the water elsewhere in the city. After a thorough flushing of the water mains in the affected area *B. coli* was absent and the total bacterial count was reduced.

An outbreak of typhoid fever was occurring in Albany when the Health News went to press, 14 cases having been reported in the northern part of the city and 3 more in other sections, with no connection revealed between the two outbreaks at that time. On October 14 an outbreak of diarrhea occurred, with approximately 170 cases, apparently confined largely to the employees of two factories and to children attending one school in the northern part of the city. The public water supply in the northern section of the city was polluted, while that elsewhere did not show pollution. Investigation revealed three illegal cross connections between the city water supply and polluted waters, one connection being between raw Hudson River water and the filtered and chlorinated public supply. After the cross connections had been eliminated and the water mains thoroughly flushed prompt improvement in the sanitary quality of the water followed.

The third outbreak of typhoid fever occurred in a factory in Oswego, with 8 cases reported to November 1, 1927. This outbreak is thought to have been due to a cross connection between the drinking-water supply and heavily polluted water from Oswego Harbor used for fire-protection purposes. The drinking-water supply showed pollution before but not after the removal of the cross connection.

The State sanitary code of New York prohibits cross connections between public water supplies and polluted water, except for temporary use and under specified conditions.

COURT DECISIONS RELATING TO PUBLIC HEALTH

City charter provision relating to collection and disposal of garbage construed.—(West Virginia Supreme Court of Appeals; State ex rel. Eckhart et al. *v.* Neal, Mayor, et al., 139 S. E. 640; decided September 20, 1927.) The charter of the city of Huntington provided:

Before entering into any contract for the collection and disposal of garbage, the board of commissioners shall advertise the same in two newspapers of opposite

politics of general circulation in the city once a week for three weeks, and shall award such contract to the lowest responsible bidder, who shall be required to furnish a surety bond in an amount not less than 40 per cent of the total annual contract price, conditioned for the faithful performance of such contract.

The supreme court of appeals held that it was not the intention of the said provision to prohibit the board of commissioners "from collecting and disposing of the garbage through the regular employees of the city, using its equipment."

Statute relating to tuberculin testing of dairy cattle upheld.—(New York Supreme Court; Ryder *v.* Pyrke, State Commissioner of Department of Farms and Markets, 224 N. Y. S. 289; decided September 30, 1927.) Under section 78 of the farms and markets law (now agriculture and markets law), prior to a 1927 amendment, the commissioner of farms and markets had a right to have made a physical examination by a competent veterinarian, of dairy cows whose milk was marketed in liquid form or manufactured into butter, cheese, or other food for human consumption. Such physical examination could be made as frequently as available funds permitted and as conditions necessitated. Under a 1927 amendment, the commissioner was authorized to make a tuberculin test in conjunction with a physical examination of the herd. An action was brought by a dairy herd owner to restrain the commissioner from subjecting plaintiff's bovine animals to the tuberculin test until and unless 90 per cent of the herds or 90 per cent of all the cattle in the town wherein he resided had been tested or the county wherein said town was located had become a tested county. In passing upon a motion by the defendant commissioner to vacate a temporary restraining order and for judgment on the pleadings, the court, with reference to the constitutionality of the above-mentioned section 78, stated:

The act under which the defendant is proceeding in March, 1927, just prior to the aforementioned amendment to section 78, was declared constitutional. (People *v.* Teuscher, 129 Misc. Rep. 94, 221 N. Y. S. 20.) * * *.

Plaintiff further contends that section 78, as amended, must be read together with sections 76 and 79, and construed to give authority to the commissioner for testing only in a tested town where 90 per cent of the cattle have already been tested; in other words, it is the claim of the plaintiff that the defendant has no legal authority to forcibly test herds in an untested town. Plaintiff also contends that the amendment to section 78 is unconstitutional in that it provides for the condemnation and confiscation of his property without reimbursement. The said amendment to section 78, in my opinion, is constitutional. I also think that the commissioner has a right to cause a physical examination of, when the funds necessary for such purpose are available, and to administer the tuberculin test to, any dairy [cattle] in the State, whether it is located in a tested or an untested town. * * *

PUBLIC HEALTH ENGINEERING ABSTRACTS

Mosquitoes a Nuisance. Anon. *Good Health*, vol. 62, No. 9, September, 1927, p. 39.

"In what is believed to be the first case of its kind, the sheriff court of Paisley, Scotland, has held that if a landowner leaves ditches in a stagnant condition, so that they become a breeding ground for mosquitoes in such numbers as to cause annoyance and injury to local residents, it is a nuisance that may be legally dealt with. The public health act of Scotland includes within its list of 'nuisances' any street, pool, ditch, gutter, watercourse, in such a state as to be a nuisance or injury or danger to health. The ditches of which complaint was made had through neglect become encumbered with silt and vegetation to such an extent as to make them ineffective as watercourses, and the water which they should have conveyed had overflowed upon the surrounding ground, which thus became the breeding place for mosquitoes."

Thermophilic Bacteria in Milk. Martha Oliver Eckford. *American Journal of Hygiene*, vol. 7, No. 3, May, 1927, pp. 201–221. (Abstract by P. R. Carter.)

The object of this research was to determine the distribution of thermophilic bacteria in Baltimore milk; their reaction to Pasteurization; their effect upon milk, their pathogenicity; the heat resistance of their spores; and to describe their morphology and cultural characteristics so that other investigators may recognize them when found in subsequent work.

A brief historical sketch, definitions, and the methods used in isolating, examining, and classifying the thermophilic bacteria in milk are given. The experimental work consisted of bacteriological examinations of 450 samples of raw and Pasteurized milk, cream, butter, cheese, and condensed milk.

The optimum temperature for these organisms was 50°–60° C., while the maximum temperature for most of them was around 70° C. A few, which grew at a minimum temperature around 42° C., were called true thermophiles. Those thermophilic bacteria which grew at temperatures below this minimum were classed as thermotolerants. Most of the organisms described in literature belong to this latter group

Milk may be contaminated by thermophilic and thermotolerant bacteria from the intestinal tract, soil, cereals, and water. If this is correct, the presence of thermophiles in milk would serve as a check on the sanitation of conditions under which milk is produced. From this research the following results and conclusions were given: (1) Of the samples of milk examined, about 70 contained thermophilic bacteria. (2) None were found in evaporated or canned milk. As long as the can remains air-tight, they could not develop even though they had survived the canning process. (3) The thermophilic bacteria isolated from the Baltimore milk supply were all aerobic spore-forming bacteria. They were similar morphologically; culturally, they differed in their reactions in gelatin, milk, and the sugars. Most of them were only weakly fermentative. Only two groups fermented lactose. (4) A thermophilic streptothrix was isolated which was proteolytic and, therefore, may be of significance in the ripening of cheese. (5) The three thermotolerant bacilli were very similar to certain thermophiles previously isolated and cultured. The four obligate thermophiles have not been described previously. (6) The thermophilic bacteria survived Pasteurization and even 100° C. to 120° C. for 15 minutes. This explains their presence in butter, cheese, and other dairy products. Obligate thermophiles had a greater resistance to high temperatures than thermotolerant organisms. Furthermore, among the thermotolerant organisms there was a direct relation between the high maximum growth and greater resistance of spores. (7) The thermotolerant organisms may cause annoyance to Pasteurizing plants by

multiplying during the process and giving the milk a high count. They may cause pinpoint colonies at 37° C.

The Standard Milk Ordinance in North Carolina. Malcolm Lewis. *Health Bulletin*, North Carolina State Board of Health, vol. 42, No. 6, June, 1927, pp. 13–19. (Abstract by P. R. Carter.)

In 1924, as a result of a preliminary survey, it was found that 21 North Carolina cities had adopted a milk ordinance of some sort and were carrying on control measures. A study of the ordinances brought out very strongly the fact that there existed a great variance in the requirements.

Since it was almost impossible to bring about a uniformity in all the ordinances, the State board of health recommended to the cities the United States Public Health Service Standard Milk Ordinance. This was done for the following reasons: (1) Uniform standards of quality were considered to be of basic importance; (2) uniform standards of milk sanitation were advocated; (3) the ordinance was found to be complete, fair, and practical; (4) classification of milk by grades is sound principle on which to base the establishment of widespread uniformity of milk-sanitation standards; (5) it was recognized that the services of an official correlating agency, such as the United States Public Health Service, was essential to the widest adoption of uniform, reliable standards.

Of the 21 cities in 1924 that had milk ordinances, 17 have adopted the Standard Milk Ordinance in place of the ordinance formerly in force. In addition, 16 other cities have adopted the Standard Milk Ordinance, thus making a total of 33 cities in which the standard ordinance is in effect. Ten cities with populations between 5,000 and 10,000 and eight cities with populations less than 5,000 have adopted this ordinance.

The main features of the Standard Milk Ordinance are given, together with a discussion of the importance of further safeguarding a high-grade raw milk by proper Pasteurization, since health authorities are now convinced that no milk can be considered entirely safe in its raw state, no matter how carefully its production is safeguarded.

The Bacterial Flora of Market Oysters. J. C. Geiger, Winnefred E. Ward and M. A. Jacobson. *Journal Infectious Diseases* 38 (3):273–280 (1926). Taken from abstract by J. C. Geiger in *Biological Abstracts*, vol. 1, No. 1, December, 1926. pp. 768–775.

"A study of the bacterial flora of market oysters during the Chicago typhoid outbreak of 1924, in which oysters were suspected as being the source of infection, revealed no *Bacillus typhosus* in 784 samples of shucked and 328 samples of shell oysters; 150 cultures of organisms from colorless colonies on Endo's medium were studied and cultural and serologic studies showed 81 organisms of types closely related to the typhoid dysentery group. Eight strains were *B. coli*, giving atypical colonies on Endo's medium. Several strains of *B. proteus*, *B. fecalis alkaligenes*, *B. cloacae*, *and B. fluorescens* were identified. One organism culturally identical with Flexner's dysentery bacillus failed to agglutinate with the Flexner or the Shiga antidysenteric sera. A group of 15 organisms resembling the paratyphoid group in their fermentation reactions but failing to agglutinate with sera of *B. paratyphosus A* or *B*, *B. suipestifer*, and *B. enteritidis*, were not classified definitely. Oysters may be a more important factor in food poisoning outbreaks of unknown origin than has hitherto been realized. A brief résumé of similar work is given, with references noted."

A suggested Bacteriological Standard for Ice Cream. F. W. Fabian. Special Bulletin No. 158, Agricultural Experiment Station, Michigan State College of Agriculture and Applied Science, August, 1926. pp. 1–18. (Abstract by J. R. Hoffert.)

The author clearly indicates the importance and value of bacteriological standards for food products, and reviews the results of the bacterial examination of ice cream, giving tables of results, and detailed results of ice cream examination in certain Michigan cities. He concludes that the bacterial count generally parallels the sanitary conditions of the materials used and of the plant; that a bacteriological standard for ice cream is a much needed measure, of benefit alike to the producer and consumer; that epidemics of infectious diseases are known to have been caused by ice cream; that Pasteurization at 150° F. for 30 minutes of the ice cream mix itself should be required by law; and that with proper and practical precautions ice cream can be consistently made to contain not over 100,000 bacterial colonies per gram using standard agar 37° 48-hour counts with the American Public Health Association methods.

A Study of the Waste Water of Paper Mills, Natsuhiko Watanabe. *Journal of the Public Health Association of Japan*, vol. 3, No. 7, July, 1927, pp. 1–17. (Abstract by C. H. Kibbey.)

The author reports a number of studies and experiments made by himself on waste waters from paper mills in an effort to determine the significance of this particular industrial waste as affecting the health of the population in certain areas, its effect on fish life in streams into which it is discharged, and its possible application to soil as a fertilizer-carrying irrigation water to growing crops.

Three kinds of waste were experimented with, designated by the author as follows: (I) Straw and lime, or paper-board refuse; (II) manila hemp, broussonetia kashinoki, sieb, and other materials used in the making of Japanese papers; (III) wastes in which the above-mentioned two are combined.

Interesting charts and tabulations of the detail technique are given covering each type of experimental study and the author's conclusions are given below:

Effects of waste water on—

(*1*) *Pathogens.*—This experiment was limited to a study of the effect of paper-mill waste on *B. typhosus*, cholera vibrio, and dysentery bacilli. No apparent germicidal power was noted in fluids Nos. I and III, but fluid No. II destroyed the cholera vibrio in 8 hours, typhoid bacilli in 4 to 8 hours, and dysentery bacilli in 2 to 4 hours when used in its original form (without dilution). Diluted to one-half strength it destroyed cholera spirilla in 8 to 18 hours, typhoid bacilli in 8 hours, and dysentery bacilli in 4 to 8 hours.

(*2*) *Fishes.*—This series of experiments indicates that "fish die in the waste water when the latter decomposes to degeneration," that it does not destroy them in a short time, and, that "the fish which lived long in such waste water acquired some peculiar odor and were unfit for eating."

(*3*) *Animals.*—Rabbits were used as the experimental animals and it is interesting to note that the animals fed with fluids No. I and No. II showed a gain in weight of from 31 to 78 grammes more than control animals which were given "plain water" to drink.

(*4*) *Plants.*—The author assumes that paper-mill wastes should be an excellent medium for the fertilization of growing crops when used for irrigating land, since they contain the essential elements of plant food and are "almost free from injurious elements." Unfortunately, his experimental rice field was attacked and destroyed by rats during the course of his experiment and the continuation of this study is left to the prefectural experimental firm under the guidance of which the Seihl Paper Mill is now conducting similar experiments.

Experiments on decolorization of waste water.—A considerable number of experiments were conducted with different chemical agents and varying dilutions of the waste in order to determine the most effective method of accomplishing decolorization. Local inhabitants appear to object more strenuously to the filthy appearance of water polluted by such waste than to its actual chemical

composition. The author concludes that "decolorization by means of sodium bisulphite and dilute sulphuric acid can not be thoroughly effective."

Experimental dilution of waste water.—Dilutions of paper-mill waste of varying strengths from 1:100 to 1:600 were made of fluids Nos. I, II, and III, and the dilutions were examined as to appearance, odor, and reaction, and were analysed for the presence of sulphuric and nitric acids, ammonia, chlorine, lime, and organic matter. These experiments are carefully tabulated.

The conclusion is that "said waste water becomes drinkable if diluted to six hundred times with distilled water, and seven hundred times with water from the river Matsubara."

Course taken in decomposition of waste water.—This series of experiments was made to determine the effect of dilution alone on the putrescibility of waste waters. It was observed that, while the original fluid decomposed and changed color by the third day, 1:5 dilution on the tenth day, and 1:10 on the fifteenth day, "It was also seen that the progress of decomposition depended much on temperature and sunshine." A dilution of 1:20 never decomposes or changes, even in the month of August.

The effect on sanitation of the districts along the river into which the waste waters flow.—(1) Mosquito breeding increased and the breeding season was prolonged. (2) Fishing, swimming, and such recreations were interfered with or made impossible. River changed from a beautiful, clear stream to one of filthy, foul, malodorous character. Fish were entirely destroyed. (3) A variety of gases are generated in the water. Air along the river bank contained 1 part per 3,000,000 of hydrogen sulphide. The foul odor varies according to the day, hour, and place.

It is the author's opinion that some means should be devised for using paper mill waste for fertilizer unless it can have dilution in the stream receiving it of at least 1 to 500.

Sewage Treatment Tank. Bulletin No. 4, Bureau of Engineering, Florida State Board of Health. (Abstract by A. F. Allen.)

This 30-page pamphlet, recently issued, contains a general discussion of household septic tanks; sketches for a rectangular concrete septic tank with one partition wall; dimensions of tanks for schools, apartments, residences and tourist camps, based upon the number of people served; and the recently promulgated State board of health regulations for septic tanks and absorption beds. The sketches show a tank having inlet and outlet T connections, the vertical legs of which are of equal length, and the partition walls pierced by a few small openings at mid-water depth. The regulations specify a basis of 50 gallons per person tank capacity, with a minimum of 250 gallons for a tank for residential use, and a minimum length of drain line of 75 feet.

The Treatment of Sludge. A. P. I. Cotterell. *Surveyor*, vol. 72, No. 1853 July 29, 1927, pp. 97–98. (Abstract by D. E. Kepner.)

This is a nontechnical description of sludge treatment, taking up individually the following processes: Pouring crude sewage on land or over special material such as straw, spreading the sludge over land in a semi-liquid state, trenching, lagooning, drying on specially prepared filters, septicization, digestion, yeast fermentation, activation by air contact, filter pressing, dumping at sea, burning, distillation, gas production, and admixture with other ingredients for the manufacture of fertilizers.

The Sewage Treatment Plant of the City of Hochst am Main. Paul Wempe. *Technische Gemeindeblatt*, vol. 29, No. 21, 1927, pp. 271–274. Translation of abstract by Kammann in *Zentralblatt für die Gesamte Hygiene*, vol. 15, No. 11–12, August 10, 1927, p. 493. (Translation by J. K. Hoskins.)

In accordance with plans of the State bureau of hygiene and waterworks of Wiesbaden, a sewage treatment plant was built in the year 1919 for the city of Hochst, serving 40,000 persons, and which has been in continuous service since the spring of 1920. The plant is located along the River Main and treats daily 4,400 cubic meters of dry weather sewage and up to five times that volume of wet weather flow. The plant consists of two parallel main double colloidal basins with especially constructed colloiders of the type patented by the bureau. In these basins an average of 90 per cent of the suspended matter is removed. The cleared sewage has a fresh appearance and is practically nonputrescible. Examinations by the bureau of water, soil, and air hygiene confirm these favorable and exceptional conditions. The sludge is conducted from the central sludge chamber to a special sludge digestion plant, by means of an automatic ejector, where it is completely digested in 70–80 days by the so-called "Gegenstrom" principle. The released gases contain over 70 per cent methane and should be a valuable by-product. This readily dewatered sludge is odorless and is used for fertilizer. The total construction cost was 160,000 marks or only 4 marks per capita. The yearly operating cost was 3,000 marks.

The New Sewage Disposal Plant of the City of Bad Homburg. *Lipp. Zentralblatt d. Bauverwalt*, vol. 47, No. 12, 1927, pp. 129–131. Translation of an abstract by Kammann in *Zentralblatt für die Gesamte Hygiene*, vol. 15, No. 11–12, August 10, 1927, p. 493. (Translation by J. K. Hoskins.)

The new sewage disposal plant of Bad Homburg was placed in service in October, 1926. The sewage is conducted to the treatment plant designed by the State bureau of hygiene and waterworks of Weisbaden, by means of an outfall sewer 2.6 kilometers in length. The plant consists of two sedimentation basins each 7.2 meters broad and 14 meters long, with built-in colloiders, and provides for two hours' sedimentation for the sewage of 30,000 persons. The settled water next flows to a second basin, where chlorination is provided in times of epidemics. Sludge digestion is provided in a separate sludge conditioning plant equipped for recovery of methane. The digested sludge is dried on underdrained drying beds and is given to the farmers. The total cost was 500,000 Reichmarks.

Pressure Filtration Plant. Anon. *Water Works*, vol. 66, No. 1, January, 1927, pp. 11–12. (Abstract by E. A. Reinke.)

A mechanical filtration plant to remove peat stain from and counteract plumbo-solvent action in a portion of the water supply at Bradford Corporation, England, is described. The supply is from peat lands containing humic acid. Water must be treated with an alkali to prevent lead poisoning. Sulphate of alumina and lime or chalk are added for coagulation, removal of color, and neutralizing the acidity. The chemicals are fed as solution through plunger pumps operated by variable-speed direct-current motors. The speed is varied automatically with the flow by means of a Venturi meter which actuates a mercurial differential gear which, in turn, operates a small electrical rheostat.

"The decision to adopt mechanical filters in this instance was reached chiefly on account of the following considerations, viz, (*a*) There is no suitable site on which to erect slow-sand or open gravity filters between the reservoir and the first point of delivery; (*b*) peaty discoloration can be effectively removed; (*c*) acidity can be readily neutralized, thus removing or reducing metallic solvency and corrosion; (*d*) initial cost of construction is less than that of slow-sand filters; (*e*) contamination from the air and the encouragement of the growth of algae are avoided, as the filtrate is delivered direct to the district of supply; (*f*) no interruption from frost; and (*g*) the bacterial purification is as efficient as in slow-sand filtration. The operating and maintenance charges are higher, owing to the cost of the coagulant—sulphate of alumina—used to effect color removal, and the water used may be greater, owing to the increased burden on

the mechanical filters arising from the decolorization process. But these factors are largely, if not entirely, offset by the interest received on the greatly reduced capital expenditure for the mechanical filters, which entirely remove the peaty stain and give a clear, colorless water."

Air Binding of Filters Attributed to Diatoms. L. C. Billings. *Engineering News Record*, vol. 98, No. 21, May 26, 1927, p. 875. (Abstract by A. S. Bedell.)

"The formation of an impervious mat of microscopic plant organisms over the sand bed surface in the filters at the Grand Rapids filter plant is an explanation given for the air bound condition found when filters are taken out of service for washing."

Conditions were conducive to growth of certain diatoms; *Nitzchia* and *Melosira* were found in large numbers. The mat reduced filter runs to two hours. Scraping did not effectively remedy the trouble. The condition was remedied by treating the water with excess lime to 5 p. p. m. causticity in filtered water for a 48-hour period.

Concrete-Glass Filter Bottom. F. B. Leopold. *Canadian Engineer*, vol. 52, No. 6, February 8, 1927, pp. 207–208. (Abstract by R. E. Thompson.)

This is an illustrated description of a filter bottom, constructed entirely of concrete and glass, installed in a 1,250,000-gallon unit in the plant of the Pennsylvania Water Co., Wilkinsburg, Pa. The cost of installation is somewhat greater than that of the usual filter bottom, but it is believed that the benefits justify the increased cost. This type of filter bottom effects a saving of at least 12 inches of gravel, and provides an absolute forced even distribution of wash water, which eliminates disturbances in the filter gravel and greatly reduces the possibility of the formation of hard spots in the filter bed. There is, also no metal to corrode and require renewal.

POLIOMYELITIS CASES REPORTED BY STATES, OCTOBER 30 TO NOVEMBER 26, 1927, AND CORRESPONDING WEEKS OF 1925 AND 1926

Telegraphic reports from State health officers for the week ended November 26, 1927, showed a decrease of 34 per cent in the number of cases of poliomyelitis as compared with the number for the preceding week.

Forty States reported 193 cases of poliomyelitis for the week ended November 26, 1927; 294 cases for the preceding week, and 307 cases for the week ended November 12, 1927.

Data are available for 39 States for the week ended November 26, 1927, and the corresponding weeks of the years 1925 and 1926. These States reported 164 cases of poliomyelitis for the week in 1927, 32 cases in 1926, and 38 cases for the corresponding week in 1925.

The following table is a continuation of tables appearing in the Public Health Reports October 7, 1927, page 2452, November 4, 1927, page 2726, and December 2, 1927, page 2952. Reports for the week ended December 3, 1927, will be found on page 3035 of this issue.

Cases of poliomyelitis reported by State health officers October 30–November 26, 1927, compared with reports for the corresponding weeks of 1925 and 1926

State	Week ended—											
	Nov. 5, 1927	Nov. 6, 1926	Nov. 7, 1925	Nov. 12, 1927	Nov. 13, 1926	Nov. 14, 1925	Nov. 19, 1927	Nov. 20, 1926	Nov. 21, 1925	Nov. 26, 1927	Nov. 27, 1926	Nov. 28, 1925
Alabama	0	1	1	1	0	2	0	2	1	0	0	1
Arizona	0	0	0	0	0	0	0	0	2	0	0	1
Arkansas	1	0	0	1	1	0	4	0	0	2	0	0
California	25	5	11	23	2	15	26	6	13	17	2	9
Colorado	7	1	0	6	0	0	2	0	1	0	0	0
Connecticut	7	0	1	3	0	1	6	1	1	1	0	0
Delaware	1	0	0	0	0	0	0	0	0	1	0	0
District of Columbia	0	1	1	0	0	1	0	0	0	------	0	0
Florida	1	0	1	2	0	0	0	0	1	0	0	0
Georgia	0	0	2	0	4	0	0	0	0	0	0	0
Idaho	8	0	------	11	0	------	3	0	------	2	0	------
Illinois	14	2	11	18	4	0	17	3	3	4	3	1
Indiana	11	2	7	7	0	3	7	1	3	2	0	0
Iowa	3	0	------	7	0	5	4	0	3	------	0	2
Kansas	4	1	4	3	1	2	2	0	0	3	1	0
Louisiana	0	1	3	0	0	2	1	1	3	0	1	1
Maine	5	0	0	7	3	1	3	0	2	6	0	0
Maryland	1	1	1	2	0	1	2	0	0	------	0	0
Massachusetts	56	10	5	38	7	3	30	4	2	19	8	1
Michigan	14	0	0	8	0	0	11	0	0	2	0	0
Minnesota	3	0	5	2	0	4	6	0	4	1	0	1
Mississippi	3	0	0	0	0	0	1	1	0	0	0	1
Missouri	7	0	1	6	0	1	5	0	1	2	0	0
Montana	1	0	0	1	0	0	2	0	0	2	1	0
Nebraska	10	3	2	5	1	3	4	1	2	8	1	0
New Jersey	9	2	4	3	2	1	3	4	1	8	1	2
New Mexico	2	0	1	3	0	1	3	0	1	2	0	0
New York	23	9	23	18	12	11	15	9	8	12	9	9
North Carolina	2	3	2	0	2	0	1	0	2	0	0	1
North Dakota	1	0	3	6	0	1	1	0	1	------	1	0
Ohio	54	------	------	26	------	------	27	------	------	29	------	------
Oklahoma	3	2	1	3	2	1	2	0	1	3	2	1
Oregon	20	1	2	22	0	0	33	0	0	26	0	0
Pennsylvania	18	6	6	27	2	0	21	2	0	10	2	0
Rhode Island	3	0	1	2	0	0	3	0	0	1	0	0
South Carolina	4	2	2	1	4	0	3	2	2	1	0	1
South Dakota	7	1	0	6	1	6	5	0	1	1	0	0
Tennessee	4	0	------	5	0	------	8	0	------	1	0	------
Texas	11	2	2	5	0	1	6	0	1	2	0	0
Utah	2	0	1	0	0	0	1	0	0	2	0	1
Vermont	------	0	2	------	0	4	2	1	3	0	0	2
Virginia	0	0	0	1	0	0	0	0	1	0	2	0
Washington	26	1	4	26	0	1	11	0	3	9	1	3
West Virginia	12	0	0	8	0	------	13	0	0	9	1	0
Wisconsin	8	2	7	9	3	6	5	2	3	7	2	2
Wyoming	0	2	0	1	1	1	0	0	1	0	0	0

DEATHS DURING WEEK ENDED NOVEMBER 26, 1927

Summary of information received by telegraph from industrial insurance companies for week ended November 26, 1927, and corresponding week of 1926. (From the Weekly Health Index, November 30, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Nov. 26, 1927	Corresponding week, 1926
Policies in force	69, 519, 120	66, 126, 032
Number of death claims	11, 263	10, 451
Death claims per 1,000 policies in force, annual rate	8. 4	8. 2

Deaths from all causes in certain large cities of the United States during the week ended November 26, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, November 30, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Nov. 26, 1927		Annual death rate per 1,000 corresponding week, 1926	Deaths under 1 year		Infant mortality rate, week ended Nov. 26, 1927 [2]
	Total deaths	Death rate [1]		Week ended Nov. 26, 1927	Corresponding week, 1926	
Total (68 cities)	6,642	11.7	[3] 12.1	618	[3] 724	[4] 52
Akron	44	--------	--------	3	7	33
Albany [5]	31	13.5	13.6	2	4	42
Atlanta	75	--------	--------	14	8	--------
White	37	--------	--------	8	4	--------
Colored	38	(6)	--------	6	4	--------
Baltimore [5]	231	14.7	13.8	26	32	82
White	168	--------	12.5	19	25	75
Colored	63	(6)	21.5	7	7	109
Birmingham	65	15.8	20.6	8	9	--------
White	31	--------	13.9	3	3	--------
Colored	34	(6)	30.9	5	6	--------
Boston	199	13.1	15.1	21	35	59
Bridgeport	35	--------	--------	2	1	34
Buffalo	120	11.4	14.5	8	15	34
Cambridge	23	9.7	9.4	1	2	18
Camden	30	11.8	10.8	2	4	84
Canton	22	10.2	10.0	3	3	72
Chicago [5]	617	10.4	10.8	56	68	49
Cincinnati	137	17.3	18.8	13	13	79
Cleveland	193	10.2	10.2	19	17	51
Columbus	66	11.8	13.3	8	5	74
Dallas	40	10.0	12.1	6	6	--------
White	26	--------	10.9	5	6	--------
Colored	14	(6)	19.5	1	0	--------
Dayton	44	12.7	12.7	4	2	66
Denver	74	13.3	13.9	7	5	--------
Des Moines	38	13.3	12.5	1	3	18
Detroit	253	9.9	11.3	34	55	52
Duluth	24	10.9	10.2	4	1	86
El Paso	37	16.9	15.3	4	6	--------
Erie	30	--------	--------	3	0	64
Fall River [5]	22	8.6	11.1	1	1	17
Flint	22	8.0	8.4	2	4	31
Fort Worth	37	11.8	13.8	6	10	--------
White	27	--------	12.3	6	8	--------
Colored	10	(6)	24.3	0	2	--------
Grand Rapids	28	9.2	9.0	5	1	74
Houston	45	--------	--------	2	7	--------
White	35	--------	--------	2	3	--------
Colored	10	(6)	--------	0	4	--------
Indianapolis	97	13.5	12.5	9	1	68
White	75	--------	11.9	8	1	70
Colored	22	(6)	16.8	1	0	60
Jersey City	58	9.4	10.0	7	9	53
Kansas City, Kans	41	18.3	16.1	4	2	84
White	28	--------	14.1	3	2	74
Colored	13	(6)	25.4	1	0	145
Kansas City, Mo	107	14.6	11.7	4	7	--------
Knoxville	25	12.8	--------	3	--------	--------
White	18	--------	--------	1	--------	--------
Colored	7	(6)	--------	2	--------	--------
Los Angeles	239	--------	--------	18	28	51
Louisville	81	13.2	13.2	2	6	17
White	56	--------	11.9	2	4	19
Colored	25	(6)	20.9	0	2	0
Lowell	31	14.7	9.9	6	3	127
Lynn	21	10.4	11.5	2	1	55
Memphis	66	19.2	15.3	5	7	--------
White	33	--------	11.9	0	3	--------
Colored	33	(6)	21.5	5	4	--------

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 67 cities.
[4] Data for 63 cities.
[5] Deaths for week ended Friday, Nov. 25, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

Deaths from all causes in certain large cities of the United States during the week ended November 26, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926—Continued

City	Week ended Nov. 26, 1927		Annual death rate per 1,000 corresponding week, 1926	Deaths under 1 year		Infant mortality rate, week ended Nov. 26, 1927
	Total deaths	Death rate		Week ended Nov. 26, 1927	Corresponding week, 1926	
Milwaukee	105	10.8	9.0	15	6	69
Minneapolis	90	10.6	11.4	7	11	40
Nashville	40	15.1	24.0	2	7	
White	34		18.1	1	2	
Colored	6	(6)	38.8	1	5	
New Bedford	30	13.1	9.6	0	4	0
New Haven	50	14.1	12.0	5	4	70
New Orleans	148	18.2	19.9	12	13	
White	89		16.6	5	5	
Colored	59	(6)	29.2	7	8	
New York	1,271	11.1	11.0	104	129	43
Bronx Borough	150	8.4	8.5	7	16	22
Brooklyn Borough	437	10.0	10.2	40	55	42
Manhattan Borough	523	15.0	14.4	46	43	55
Queens Borough	140	9.0	7.4	10	11	44
Richmond Borough	21	7.4	13.2	1	4	19
Newark, N. J	78	8.7	9.3	10	12	50
Oakland	63	12.3	11.8	3	6	35
Oklahoma City	25			5	2	
Omaha	39	9.3	13.8	2	6	23
Paterson	27	9.8	8.4	4	3	72
Philadelphia	410	10.5	11.5	59	50	80
Pittsburgh	189	15.3	11.0	22	22	76
Portland, Oreg	67			3	1	32
Providence	66	12.2	11.8	8	7	69
Richmond	46	12.5	14.9	2	4	26
White	32		10.9	1	3	20
Colored	14	(6)	24.5	1	1	37
Rochester	64	10.3	10.7	6	3	51
St. Louis	207	12.9	14.6	9	26	
St. Paul	45	9.4	12.4	5	2	46
Salt Lake City [5]	24	9.2	11.3	7	5	111
San Antonio	52	12.9	16.3	6	8	
San Diego	38	17.2	16.5	1	1	22
San Francisco	135	12.2	13.2	7	8	44
Schenectady	12	6.7	14.0	2	3	60
Seattle	45			1	6	11
Somerville	9	4.6	7.8	0	2	0
Spokane	37	17.7	13.4	4	4	96
Springfield, Mass	30	10.6	13.7	3	4	47
Syracuse	40	10.6	11.2	3	3	39
Tacoma	27	13.2	12.3	1	0	23
Toledo	71	12.2	11.7	6	4	57
Trenton	38	14.5	13.2	1	3	18
Utica	29	14.7	15.8	1	3	23
Washington, D. C	122	11.8	12.4	6	9	35
White	82		10.6	3	4	26
Colored	40	(6)	17.9	3	5	55
Waterbury	23			1	2	23
Wilmington, Del	31	12.8	11.3	4	2	99
Worcester	50	13.4	12.1	5	6	60
Yonkers	24	10.5	10.8	1	2	23
Youngstown	25	7.7	9.5	2	5	27

[5] Deaths for week ended Friday, Nov. 25, 1927.

[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmington, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge or when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks Ended December 4, 1926, and December 3, 1927

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 4, 1926, and December 3, 1927

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Dec. 4, 1926	Week ended Dec. 3, 1927	Week ended Dec. 4, 1926	Week ended Dec. 3, 1927	Week ended Dec. 4, 1926	Week ended Dec. 3, 1927	Week ended Dec. 4, 1926	Week ended Dec. 3 1927
New England States:								
Maine	3	12	2	6	105	46	0	0
Vermont	2	0			125	2	0	0
Massachusetts	115	169	12	13	49	516	4	3
Rhode Island	7	31	10	10	0	2	0	0
Connecticut	32	43	13	5	69	29	0	0
Middle Atlantic States:								
New York	319	422	[1] 57	[1] 10	979	299	4	5
New Jersey	119	178	15	7	41	62	0	1
Pennsylvania	211	328			702	433	1	6
East North Central States:								
Ohio		115		8		52		1
Indiana	126	39	60	26	49	20	0	0
Illinois	142	195	17	20	408	15	2	9
Michigan	125	100			68	217	0	1
Wisconsin	68	33	36	30	526	120	1	1
West North Central States:								
Minnesota	81	56		4	86	5	0	1
Iowa [2]	30	19			19	3	0	0
Missouri	62	89	11	5	108	10	5	2
North Dakota	12				182		0	
South Dakota	9	10			72	33	0	0
Nebraska	9	42	11	3	6	7	0	0
Kansas	38	29	5	3	51	45	1	0
South Atlantic States:								
Delaware	3	2			0	0	0	0
Maryland [2]	58	37	23	24	34	64	1	1
District of Columbia	23				0		0	
Virginia								
West Virginia	52	13	50	13	57	7	2	0
North Carolina	120	122			42	806	0	0
South Carolina	71	57	513	559	13	261	0	0
Georgia	62	37	65	82	12	17	1	0
Florida	37	34		14	2	1	0	0
East South Central States:								
Tennessee	62	40	66	52	20	94	2	0
Alabama	88	109	33	70	6	38	0	0
Mississippi	37	39					0	0
West South Central States:								
Arkansas	8	36	88	96	3	63	1	0
Louisiana	29	43	24	12	29	37	1	2
Oklahoma [3]	59	119	152	75	2	85	1	1
Texas	78	111	7	64	2	17	0	0
Mountain States:								
Montana	1	4			105	1	0	1
Idaho	0	4			33	1	0	0
Wyoming	2	2			13	2	5	0
Colorado	24	12	4		40	2	0	1
New Mexico	8	7	2		17	9	1	1
Arizona	1	9			16	2	0	0
Utah [2]	9	10		3	291	0	0	3
Pacific States:								
Washington	39	43			145	214	6	1
Oregon	19	22	18	29	42	18	1	3
California	187	137	22	32	809	36	2	2

[1] New York City only. [2] Week ended Friday. [3] Exclusive of Tulsa.

Reports for Week Ended December 4, 1926, and December 3, 1927—Continued

Cases of certain cummunicable diseases reported by telegraph by State health officers for weeks ended December 4, 1926, and December 3, 1927—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Dec. 4, 1926	Week ended Dec. 3, 1927	Week ended Dec. 4, 1926	Week ended Dec. 3, 1927	Week ended Dec. 4, 1926	Week ended Dec. 3, 1927	Week ended Dec. 4, 1926	Week ended Dec. 3, 1927
New England States:								
Maine	0	1	39	42	0	0	2	2
Vermont	0	0	4	1	0	0	0	0
Massachusetts	3	24	345	279	0	0	14	14
Rhode Island	0	2	19	25	0	0	0	0
Connecticut	0	1	58	68	0	0	0	2
Middle Atlantic States:								
New York	8	19	374	361	21	8	38	33
New Jersey	5	2	179	119	0	0	10	18
Pennsylvania	2	13	453	575	0	0	60	39
East North Central States:								
Ohio		22		264		25		35
Indiana	0	2	212	128	151	57	10	9
Illinois	4	3	293	226	15	24	54	15
Michigan	0	3	204	224	9	41	5	18
Wisconsin	0	3	123	165	8	29	6	5
West North Central States:								
Minnesota	0	4	217	128	7	0	7	2
Iowa [2]	2	0	30	77	15	45	3	4
Missouri	0	2	134	101	9	47	6	13
North Dakota	0		66		17		0	
South Dakota	1	8	100	33	20	11	1	1
Nebraska	0	1	33	50	18	10	23	3
Kansas	1	1	95	101	26	34	9	0
South Atlantic States:								
Delaware	0	0	18	4	0	0	2	2
Maryland [2]	0	1	53	59	0	0	9	14
District of Columbia	0		10		0		0	
Virginia								
West Virginia	0	4	65	51	2	6	22	3
North Carolina	0	0	93	148	72	39	7	4
South Carolina	0	3	25	43	6	7	29	21
Georgia	0	0	17	37	20	0	22	10
Florida	0	2	17	16	28	2	19	6
East South Central States:								
Tennessee	0	3	66	35	0	5	33	25
Alabama	2	0	24	33	11	6	19	18
Mississippi	0	1	22	28	4	5	19	3
West South Central States:								
Arkansas	0	3	12	20	3	4	21	21
Louisiana	0	1	26	15	1	11	10	14
Oklahoma [3]	1	3	46	53	42	41	42	53
Texas	2	10	55	50	2	6	3	13
Mountain States:								
Montana	0	1	63	48	16	27	1	1
Idaho	0	1	39	21	7	9	0	0
Wyoming	0	0	13	28	0	5	0	3
Colorado	1	0	138	54	19	11	3	7
New Mexico	0	2	33	8	0	0	7	7
Arizona	0	0	10	2	0	0	1	2
Utah [2]	0	1	15	10	1	19	0	1
Pacific States:								
Washington	0	17	109	50	39	31	15	6
Oregon	0	26	47	39	18	20	1	8
California	2	10	217	162	21	10	10	2

[2] Week ended Friday. [3] Exclusive of Tulsa.

Report for Week Ended November 26, 1927

DISTRICT OF COLUMBIA

	Cases
Diphtheria	21
Influenza	1
Scarlet fever	18

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
October, 1927										
Arkansas	3	90	147	1,523	49	444	18	68	8	127
Colorado	14	89	4		25		28	175	1	59
Idaho	4	11			7		7	59	47	5
Kansas	5	216	19	2	146	1	45	392	80	74
Maine	0	10	3		218		48	158	0	30
Mississippi	2	421	2,032	11,834	632	857	6	174	46	102
Missouri	7	334	34	12	29		92	428	70	137
Montana	6	15	3		12		5	65	79	7
North Carolina	2	717			749		3	535	41	88
Oklahoma [1]	6	609	182	1,026	108	43	43	201	57	398
Oregon	6	57	95		52		111	91	94	69
South Dakota	1	23	6		26		25	126	45	18
Virginia	3	507	1,103	132	291	32	14	358	14	125
Washington	11	79	19		206		110	203	63	23
Wisconsin	22	143	143		252		38	368	52	30

[1] Exclusive of Oklahoma City and Tulsa.

October, 1927	Cases
Angina:	
Colorado	11
Anthrax:	
Arkansas	3
Colorado	1
Mississippi	2
Chicken pox:	
Arkansas	45
Colorado	13
Idaho	47
Kansas	263
Maine	92
Mississippi	250
Missouri	145
Montana	92
North Carolina	98
Oklahoma [1]	41
Oregon	95
South Dakota	19
Virginia	281
Washington	248
Wisconsin	425
Dengue:	
Mississippi	11
Oklahoma [1]	1
Dysentery:	
Colorado	1
Mississippi (amoebic)	59
Mississippi (bacillary)	420
Oklahoma [1]	26
Virginia	135
German measles:	
Colorado	3
Kansas	4
Maine	9
North Carolina	11
Washington	36
Wisconsin	9
Hookworm disease:	Cases
Arkansas	8
Mississippi	306
Oklahoma [1]	3
Virginia	6
Impetigo contagiosa	
Colorado	2
Kansas	4
Oregon	22
Washington	9
Jaundice (catarrhal):	
Idaho	1
Lethargic encephalitis:	
Kansas	2
Oregon	2
Washington	1
Wisconsin	2
Malta fever.	
South Dakota	1
Mumps.	
Arkansas	160
Colorado	15
Idaho	96
Kansas	32
Maine	15
Mississippi	195
Missouri	77
Montana	4
Oklahoma [1]	6
Oregon	49
South Dakota	26
Washington	135
Wisconsin	169
Ophthalmia neonatorum:	
Arkansas	7
Mississippi	7
Missouri	1
Oklahoma [1]	4
Wisconsin	8

[1] Exclusive of Oklahoma City and Tulsa.

	Cases
Paratyphoid fever:	
Arkansas	3
Colorado	6
Idaho	4
Washington	1
Puerperal septicemia:	
Mississippi	36
Rabies in animals:	
Idaho	1
Mississippi	12
Missouri	3
Oregon	2
Rocky Mountain spotted or tick fever:	
Idaho	1
Septic sore throat:	
Idaho	4
Kansas	2
Maine	16
Missouri	7
North Carolina	9
Oklahoma [1]	20
Oregon	3
Scabies:	
Oregon	10
Washington	11
Tetanus:	
Missouri	1
Oklahoma [1]	4
Trachoma:	
Arkansas	4
Mississippi	9
Missouri	40
Oklahoma [1]	12
South Dakota	1
Wisconsin	1
Trench mouth:	
Kansas	1
Typhus fever:	
Virginia	1
Vincent's angina:	
Kansas	4
Maine	6
Oklahoma [1]	2
Whooping cough:	
Arkansas	47
Colorado	53
Idaho	12
Kansas	214
Maine	80
Mississippi	997
Missouri	251
Montana	30
North Carolina	566
Oklahoma [1]	73
Oregon	28
South Dakota	7
Virginia	292
Washington	50
Wisconsin	315

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 99 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,680,000. The estimated population of the 93 cities reporting deaths is more than 30,000,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended November 19, 1927, and November 20, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
43 States	2,933	2,816	
99 cities	1,340	1,334	1,293
Measles:			
42 States	2,615	4,273	
99 cities	735	787	
Poliomyelitis:			
43 States	273	40	
Scarlet fever:			
43 States	3,409	4,035	
99 cities	1,048	1,235	948
Smallpox:			
42 States	462	372	
99 cities	111	27	39
Typhoid fever:			
43 States	479	710	
99 cities	90	89	78
Deaths reported			
Influenza and pneumonia:			
93 cities	700	750	
Smallpox:			
93 cities	1	0	
Chicago	1	0	

[1] Exclusive of Oklahoma City and Tulsa.

City reports for week ended November 19, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during non-epidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	4	2	1	0	0	0	1	1
New Hampshire:									
Concord	22,546	0	0	0	0	0	3	0	6
Manchester	83,097	0	4	0	0	0	0	0	0
Vermont:									
Barre	10,008	6	1	0	0	0	0	0	0
Burlington	24,089	1	0	0	0	0	4	0	0
Massachusetts:									
Boston	779,620	52	48	16	2	2	138	6	19
Fall River	128,993	0	5	4	0	0	0	1	5
Springfield	142,065	4	4	5	0	0	0	5	1
Worcester	190,757	27	6	18	0	0	3	46	0
Rhode Island:									
Pawtucket	69,760	4	1	2	0	0	0	7	0
Providence	267,918	0	10	9	0	0	0	4	1
Connecticut:									
Bridgeport	(1)	1	10	5	0	0	2	1	3
Hartford	160,197	8	8	6	4	0	0	2	5
New Haven	178,927	10	3	4	0	0	22	15	3
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	32	20	16	--------	0	16	14	15
New York	5,873,356	124	169	260	15	3	29	26	132
Rochester	316,786	4	10	10	--------	0	1	2	2
Syracuse	182,003	18	11	2	--------	0	15	2	4
New Jersey:									
Camden	128,642	5	7	8	1	1	0	2	3
Newark	452,513	42	11	34	5	0	13	14	11
Trenton	132,020	1	5	2	0	2	7	0	5
Pennsylvania:									
Philadelphia	1,979,364	172	82	65	--------	6	6	64	45
Pittsburgh	631,563	33	31	72	--------	3	102	21	24
Reading	112,707	12	8	5	--------	0	0	1	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	10	19	10	0	0	1	0	16
Cleveland	936,485	44	54	101	0	0	10	68	12
Columbus	279,836	21	13	20	0	0	1	1	4
Toledo	287,380	72	17	6	0	0	7	3	6
Indiana:									
Fort Wayne	97,846	--------	5	--------	--------	--------	--------	--------	--------
Indianapolis	358,819	19	12	16	0	0	2	29	13
South Bend	80,091	1	3	0	0	0	1	0	3
Terre Haute	71,071	0	3	2	0	0	0	0	3
Illinois:									
Chicago	2,995,239	84	124	123	4	2	5	15	54
Springfield	63,923	1	3	2	0	0	0	0	1
Michigan:									
Detroit	1,245,824	68	80	74	2	0	46	54	22
Flint	130,316	12	14	7	0	0	2	50	5
Grand Rapids	153,698	3	6	0	0	0	10	3	0

[1] No estimate made.

City reports for week ended November 19, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria: Cases, estimated expectancy	Diphtheria: Cases reported	Influenza: Cases reported	Influenza: Deaths reported	Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
EAST NORTH CENTRAL—continued									
Wisconsin:									
Kenosha	50,891	12	3	1	0	0	2	5	0
Milwaukee	509,192	88	84	12	1	1	1	12	10
Racine	67,707	11	3	0	0	0	0	1	0
Superior	39,671	2	2	0	0	0	0	0	1
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	5	2	0	0	0	0	0	1
Minneapolis	425,435	77	85	20	0	2	0	4	9
St. Paul	246,001	11	20	5	0	0	0	32	9
Iowa:									
Davenport	52,469	0	2	0	0		0	0	
Des Moines	141,441	0	7	0	0		0	0	
Sioux City	76,411	11	3	0	0		0	12	
Waterloo	36,771	11	1	0	0		0	0	
Missouri:									
Kansas City	367,481	20	14	7	0	2	1	19	11
St. Joseph	78,342	1	3	0	0	0	1	1	3
St. Louis	821,543	16	52	41	0	0	6	0	
North Dakota:									
Fargo	26,403	9	1	0	0	0	0	1	1
Grand Forks	14,811	2	1	0	0		2	0	
South Dakota:									
Aberdeen	15,036	2	0	0	0		1	0	
Sioux Falls	30,127	1	1	0	0		1	0	
Nebraska:									
Lincoln	60,941	18	2	1	0	0	1	8	0
Omaha	211,768	19	8	1	0	0	1	0	2
Kansas:									
Topeka	55,411	26	3	2	0	1	1	0	0
Wichita	88,367	4	8	1	0	0	1	1	3
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	0	3	1	0	0	0	0	4
Maryland:									
Baltimore	796,296	81	37	31	8	3	36	3	27
Cumberland	33,741	1	0	0	0	0	0	0	0
Frederick	12,035	0	0	0	0	0	0	0	0
District of Columbia:									
Washington	497,906	20	23	18	3	1	1	0	12
Virginia:									
Lynchburg	30,395	4	3	10	0	0	0	0	2
Norfolk	(1)	9	5	7	0	0	5	0	3
Richmond	186,403	1	20	18	0	2	7	0	4
Roanoke	58,208	5	5	2	0	0	5	0	1
West Virginia:									
Charleston	49,019	0	4	0	0	1	1	0	2
Wheeling	56,208	17	4	1	0	0	0	0	1
North Carolina:									
Raleigh	30,371	11	3	1	0	0	1	0	0
Wilmington	37,061	5	1	5	0	0	32	0	3
Winston-Salem	69,031	0	8	8	0	0	4	12	4
South Carolina:									
Charleston	73,125	0	2	2	24	1	1	0	2
Columbia	41,225	4	1	1	0	1	18	7	2
Greenville	27,311	0	2	1	0	0	21	2	1
Georgia:									
Atlanta	(1)	2	9	10	24	2	0	0	15
Brunswick	16,809	0	0	0	0	0	0	1	0
Savannah	93,134	1	3	2	10	0	24	0	4
Florida:									
St. Petersburg	26,847		0			0			1
Tampa	94,743	0	3	2	0	1	0	0	2

[1] No estimate made.

City reports for week ended November 19, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	3	4	0	0	0	0	2
Louisville	305,935	1	9	6	2	0	0	0	6
Tennessee:									
Memphis	174,533	2	11	5	0	2	28	0	5
Nashville	136,220	3	6	8	0	1	1	0	6
Alabama:									
Birmingham	205,670	5	7	15	2	1	6	0	9
Mobile	65,955	1	2	2	0	0	0	0	1
Montgomery	46,481	0	2	7	1	0	0	1	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,043	0	2	3	0		0	0	
Little Rock	74,216	0	3	4	0	0	2	4	2
Louisiana:									
New Orleans	414,493	1	13	9	9	5	1	0	18
Shreveport	57,857	0	2	6	0	0	11	2	0
Oklahoma:									
Oklahoma City	(1)	0	4	20	5	1	0	0	1
Tulsa	124,478	4		7	0		0	6	
Texas:									
Dallas	194,450	2	16	36	2	1	1	0	1
Galveston	48,375	0	1	0	0	0	0	0	1
Houston	164,954	0	6	6	0	0	0	0	2
San Antonio	198,069	0	4	19	0	2	2	0	9
MOUNTAIN									
Montana:									
Billings	17,971	0	1	0	0	0	0	0	0
Great Falls	29,883	3	1	0	0	0	0	0	0
Helena	12,037	0	0	0	0	0	0	0	0
Missoula	12,668	1	1	0	0	0	1	0	0
Idaho:									
Boise	23,042	0	0	0	0	0	4	0	0
Colorado:									
Denver	280,911	50	15	13		4	3	13	5
Pueblo	43,787	11	4	1	0	0	0	0	2
New Mexico									
Albuquerque	21,000	0	1	0	0	0	0	0	0
Utah:									
Salt Lake City	130,948	41	5	7	0	0	0	1	3
Nevada:									
Reno	12,665	0	0	2	0	0	0	0	1
PACIFIC									
Washington:									
Seattle	(1)	34	6	10	0		53	4	
Spokane	108,897	40	4	0	0		1	0	
Tacoma	104,455	1	4	2	0	0	0	2	1
Oregon:									
Portland	282,383	16	10	4	1	1	4	1	6
California:									
Los Angeles	(1)	18	47	46	5	1	7	9	17
Sacramento	72,260	9	3	4	0	0	2	0	0
San Francisco	557,530	65	19	23	1	0	18	6	4

[1] No estimate made.

City reports for week ended November 19, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
NEW ENGLAND											
Maine:											
Portland	1	2	0	0	0	0	0	0	0	0	22
New Hampshire:											
Concord	1	0	0	0	0	0	0	0	0	0	12
Manchester	2	1	0	0	0	2	0	0	0	0	19
Vermont:											
Barre	0	0	0	0	0	0	0	0	0	0	2
Burlington	1	0	0	0	0	0	0	0	0	0	7
Massachusetts:											
Boston	46	59	0	0	0	13	2	5	0	46	226
Fall River	2	7	0	0	0	0	1	3	0	0	28
Springfield	6	5	0	0	0	1	0	1	0	10	32
Worcester	10	1	0	0	0	1	0	0	0	3	38
Rhode Island:											
Pawtucket	0	2	0	0	0	0	0	0	0	0	25
Providence	7	11	0	0	0	3	0	0	0	0	51
Connecticut:											
Bridgeport	7	3	0	0	0	1	1	0	0	4	30
Hartford	5	16	0	0	0	3	0	0	0	10	32
New Haven	6	1	0	0	0	0	1	1	0	21	24
MIDDLE ATLANTIC											
New York:											
Buffalo	17	34	0	0	0	8	1	0	0	7	182
New York	109	108	1	0	0	91	18	23	4	165	1,376
Rochester	6	6	0	0	0	2	1	1	0	0	62
Syracuse	10	11	0	0	0	3	0	0	0	10	42
New Jersey:											
Camden	4	3	0	0	0	1	0	0	0	0	36
Newark	15	18	0	0	0	4	1	1	0	37	104
Trenton	1	0	0	0	0	5	0	0	0	1	54
Pennsylvania:											
Philadelphia	62	92	0	0	0	38	5	3	3	35	563
Pittsburgh	37	33	0	0	0	13	0	0	0	10	213
Reading	1	8	0	0	0	0	0	1	0	0	20
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	13	11	0	0	0	8	1	1	1	0	156
Cleveland	28	21	0	0	0	14	2	0	0	26	164
Columbus	9	20	1	0	0	4	0	0	0	3	66
Toledo	13	11	0	0	0	1	1	1	0	9	50
Indiana:											
Fort Wayne	2	------	1	------	------	------	0	------	------	------	------
Indianapolis	11	28	3	0	0	1	0	0	0	5	115
South Bend	4	5	0	0	0	0	0	0	0	0	22
Terre Haute	4	1	1	3	0	0	0	0	0	4	30
Illinois:											
Chicago	102	86	0	5	1	45	4	7	0	61	679
Springfield	2	8	0	0	0	0	0	0	0	1	17
Michigan:											
Detroit	72	56	1	1	0	21	3	1	0	75	235
Flint	9	22	1	0	0	0	0	0	0	8	15
Grand Rapids	9	9	1	0	0	1	0	0	0	2	22
Wisconsin:											
Kenosha	1	0	0	0	0	0	0	1	0	0	4
Milwaukee	18	25	2	0	0	3	0	0	0	9	99
Racine	4	4	0	0	0	1	0	0	0	6	9
Superior	2	3	1	0	0	0	0	0	0	0	6

City reports for week ended November 13, 1937—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
WEST NORTH CENTRAL											
Minnesotta:											
Duluth	6	5	0	0	0	2	0	0	0	5	14
Minneapolis	44	26	2	0	0	6	0	0	0	0	122
St. Paul	19	9	2	0	0	3	0	0	0	1	56
Iowa:											
Davenport	0	1	0	0	-------	-------	0	0	-------	0	-------
Des Moines	8	10	2	10	-------	-------	0	0	-------	0	24
Sioux City	3	3	0	3	-------	-------	0	0	-------	0	-------
Waterloo	2	1	1	0	-------	-------	0	0	-------	1	-------
Missouri:											
Kansas City	11	9	0	0	0	4	1	5	1	1	102
St. Joseph	4	0	0	72	0	1	0	0	0	0	26
St. Louis	34	19	0	0	0	2	3	4	2	9	210
North Dakota:											
Fargo	2	16	0	0	0	0	0	0	0	1	7
Grand Forks	0	2	0	1	-------	-------	0	0	-------	0	-------
South Dakota:											
Aberdeen	0	0	0	0	-------	-------	0	0	-------	0	-------
Sioux Falls	2	9	0	0	-------	-------	0	0	-------	0	5
Nebraska:											
Lincoln	1	0	0	0	0	0	0	1	0	14	24
Omaha	5	18	2	2	0	1	0	1	0	0	47
Kansas:											
Topeka	8	0	1	2	0	0	1	0	0	3	20
Wichita	4	11	1	2	0	0	0	0	0	0	27
SOUTH ATLANTIC											
Delaware:											
Wilmington	4	1	0	0	0	1	1	1	0	0	35
Maryland:											
Baltimore	17	20	0	0	0	16	4	2	0	16	245
Cumberland	1	2	0	0	0	0	1	0	0	0	9
Frederick	1	0	0	0	0	0	0	0	0	0	2
Dist. of Columbia:											
Washington	16	23	0	1	0	11	2	2	0	5	138
Virginia:											
Lynchburg	0	3	0	0	0	0	0	0	0	0	12
Norfolk	2	1	0	0	0	1	0	0	0	7	-------
Richmond	8	8	0	0	0	1	0	1	0	0	47
Roanoke	3	4	0	0	0	1	0	1	0	0	14
West Virginia:											
Charleston	1	1	0	1	0	2	0	0	0	0	14
Wheeling	2	1	0	0	0	0	1	0	0	0	12
North Carolina:											
Raleigh	2	1	0	1	0	1	0	0	0	0	10
Wilmington	1	1	0	0	0	0	1	0	0	3	14
Winston-Salem	1	4	1	0	0	0	1	0	0	0	14
South Carolina:											
Charleston	0	1	0	0	0	0	0	2	1	0	23
Columbia	1	0	0	0	0	1	0	1	0	2	16
Greenville	1	3	0	0	0	0	0	0	0	8	3
Georgia:											
Atlanta	6	9	0	0	0	6	1	3	0	1	83
Brunswick	0	0	0	0	0	0	0	0	0	0	5
Savannah	1	3	0	2	0	3	0	1	0	0	35
Florida:											
St. Petersburg	0	-------	0	-------	0	1	0	-------	0	-------	11
Tampa	0	0	0	0	0	1	0	0	0	0	24
EAST SOUTH CENTRAL											
Kentucky:											
Covington	1	3	0	1	0	1	0	0	0	0	16
Louisville	5	9	0	0	0	1	1	0	0	0	58
Tennessee:											
Memphis	5	3	0	0	0	4	2	1	1	3	61
Nashville	4	4	0	0	0	4	2	1	1	2	53
Alabama:											
Birmingham	4	3	0	0	0	3	2	0	0	0	61
Mobile	0	0	0	0	0	2	0	1	0	0	19
Montgomery	0	0	0	0	0	0	0	0	0	2	-------

City reports for week ended November 19, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	2	0	0	0			1	0		0	
Little Rock	2	6	0	0	0	3	1	1	0	0	
Louisiana:											
New Orleans	6	4	0	0	0	9	2	3	0	2	127
Shreveport	1	2	0	0	0	1	1	0	0	0	34
Oklahoma:											
Oklahoma City	3	1	0	6	0	0	1	0	0	0	23
Tulsa		1		1				0		3	
Texas:											
Dallas	5	9	0	0	0	2	1	2	0	5	46
Galveston	1	1	0	0	0	0	1	0	0	0	14
Houston	0	3	0	0	0	2	0	1	0	0	51
San Antonio	1	0	0	1	0	6	0	0	1	0	62
MOUNTAIN											
Montana:											
Billings	1	0	0	0	0	0	0	0	0	0	3
Great Falls	1	2	1	0	0	0	0	0	0	0	8
Helena	0	1	0	0	0	0	0	0	0	0	4
Missoula	0	0	0	0	0	0	0	0	0	0	2
Idaho:											
Boise	0	0	0	0	0	0	0	0	0	0	8
Colorado:											
Denver	10	14	2	0	0	8	1	1	0	10	66
Pueblo	0	4	0	0	0	1	0	0	0	6	11
New Mexico:											
Albuquerque	0	1	0	0	0	2	1	1	0	0	9
Utah:											
Salt Lake City	2	5	1	3	0	1	0	1	0	2	26
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	5
PACIFIC											
Washington:											
Seattle	9	10	8	0			1	1		2	
Spokane	7	6	4	6			0	1		0	
Tacoma	3	8	2	0	0	1	0	0	0	0	26
Oregon:											
Portland	9	5	3	1	0	4	1	0	0	0	76
California:											
Los Angeles	22	17	3	0	0	26	2	1	0	7	228
Sacramento	2	3	1	4	0	3	1	1	0	0	17
San Francisco	10	15	0	1	0	4	1	1	1	5	122

Division, State, and city	Meningococcus meningitis: Cases	Meningococcus meningitis: Deaths	Lethargic encephalitis: Cases	Lethargic encephalitis: Deaths	Pellagra: Cases	Pellagra: Deaths	Poliomyelitis (infantile paralysis): Cases, estimated expectancy	Poliomyelitis (infantile paralysis): Cases	Poliomyelitis (infantile paralysis): Deaths
NEW ENGLAND									
Maine:									
Portland	0	0	0	0	0	0	0	2	1
Massachusetts:									
Boston	2	0	0	0	0	0	1	9	1
Fall River	1	0	0	0	0	0	0	2	0
Rhode Island:									
Providence	0	0	0	0	0	0	0	2	0
MIDDLE ATLANTIC									
New York:									
New York	0	2	4	2	0	0	5	6	2
New Jersey:									
Newark	0	0	1	0	0	0	1	0	0
Pennsylvania:									
Philadelphia	0	2	1	0	1	1	1	7	2
Pittsburgh	1	0	0	1	0	0	0	0	1

City reports for week ended November 19, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
EAST NORTH CENTRAL									
Ohio:									
Toledo	0	0	0	0	0	0	0	1	0
Indiana:									
Indianapolis	0	1	0	0	0	0	0	0	0
Illinois:									
Chicago	1	0	0	0	0	0	1	4	0
Michigan:									
Detroit	2	0	0	0	0	1	0	1	0
Grand Rapids	0	0	0	0	0	0		1	1
Wisconsin:									
Milwaukee	0	2	0	0	0	0	0	0	0
Racine	1	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	1	0	0	0	0	0	0	0	0
Iowa:									
Waterloo	0	0	0	0	0	0	0	0	1
Missouri:									
Kansas City	0	0	0	0	1	1	0	1	0
St. Louis	1	0	0	0	0	0	0	0	0
SOUTH ATLANTIC									
Maryland:									
Baltimore	0	0	0	1	1	1	0	1	0
Virginia:									
Richmond	1	0	0	0	0	0	0	0	0
South Carolina:									
Columbia	0	0	0	0	0	2	0	0	0
EAST SOUTH CENTRAL									
Tennessee:									
Nashville	0	0	0	0	0	1	0	1	0
Alabama:									
Birmingham	1	0	0	0	1	1	0	0	0
Mobile	0	1	0	0	0	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	1		0		0		0	0	
Little Rock	0	0	0	0	1	0	0	0	0
Louisiana.									
New Orleans	0	0	0	0	5	1	0	1	1
Shreveport	0	0	0	0	0	2	0	0	0
Texas:									
Galveston	0	0	0	0	0	1	0	0	0
MOUNTAIN									
Colorado:									
Denver	1	3	0	0	0	0	1	0	0
Utah:									
Salt Lake City	3	1	0	0	0	0	0	1	0
PACIFIC									
Washington:									
Seattle	0		0		0		0	1	
Spokane	0		0		0		0	1	
Tacoma	0	0	0	0	0	0	0	2	1
Oregon:									
Portland	0	0	0	0	0	0	0	1	2
California:									
Los Angeles	4	1	1	0	0	1	0	2	2
Sacramento	0	0	0	0	0	0	0	2	0
San Francisco	0	0	1	0	0	0	0	5	1

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended November 19, 1927, compared with those for a like period ended November 20, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had

estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, October 16 to November 19, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927
101 cities	203	170	213	195	224	[2] 214	228	[3] 215	230	[4] 228
New England	85	128	106	135	118	114	134	160	139	163
Middle Atlantic	122	143	138	191	143	226	163	205	159	284
East North Central	260	199	241	232	275	261	264	254	292	[5] 249
West North Central	240	129	264	139	282	195	222	161	214	153
South Atlantic	300	194	354	192	317	185	387	190	276	[6] 218
East South Central	398	168	383	260	424	153	264	209	367	229
West South Central	279	268	331	298	253	323	378	[7] 284	326	348
Mountain	255	153	155	99	219	99	182	279	146	207
Pacific	190	220	204	152	287	[2] 144	230	[8] 224	324	223

MEASLES CASE RATES

	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927
101 cities	49	55	64	70	81	[2] 77	106	[3] 97	135	[4] 125
New England	26	186	24	190	66	241	31	341	47	390
Middle Atlantic	12	64	13	72	16	72	44	124	28	83
East North Central	50	21	77	18	80	29	101	27	120	[5] 55
West North Central	42	22	85	34	151	14	147	16	198	22
South Atlantic	26	45	9	107	20	132	24	136	54	[6] 292
East South Central	21	51	21	204	26	234	10	76	31	148
West South Central	4	38	0	21	9	21	26	[7] 13	26	71
Mountain	337	72	302	63	793	9	1,731	18	1,950	72
Pacific	276	50	340	92	313	[2] 80	279	[8] 76	466	212

SCARLET FEVER CASE RATES

	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927
101 cities	152	117	169	146	188	[2] 149	206	[3] 150	212	[4] 178
New England	193	151	245	211	264	200	351	204	330	248
Middle Atlantic	51	74	92	97	94	110	125	110	130	152
East North Central	155	128	157	166	186	173	182	177	201	[5] 202
West North Central	373	137	355	248	415	165	347	185	407	232
South Atlantic	162	161	132	168	197	159	177	183	143	[6] 164
East South Central	222	148	331	138	248	168	295	153	228	112
West South Central	95	80	112	126	112	151	142	[7] 108	116	105
Mountain	447	279	365	144	583	180	702	183	638	234
Pacific	233	136	236	97	204	[2] 149	279	[8] 117	335	154

SMALLPOX CASE RATES

	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927
101 cities	3	7	3	7	3	[2] 18	5	[3] 16	5	[4] 19
New England	0	0	0	9	0	0	0	0	0	0
Middle Atlantic	0	0	0	0	0	0	0	0	0	0
East North Central	3	0	1	0	6	6	10	4	3	[5] 6
West North Central	0	42	2	52	2	159	10	157	4	161
South Atlantic	9	7	6	0	0	14	2	5	4	[6] 10
East South Central	10	5	5	5	10	0	10	0	0	5
West South Central	0	9	4	0	9	4	30	[7] 4	4	4
Mountain	0	72	9	45	0	36	9	27	9	27
Pacific	16	21	21	16	3	[2] 19	5	[8] 3	48	29

[1] The figures given in this table are rates per 100,000 population annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.
[2] Tacoma, Wash., not included.
[3] Fort Smith, Ark., Seattle, Wash., and Spokane, Wash., not included.
[4] Fort Wayne, Ind., and Norfolk, Va., not included.
[5] Fort Wayne, Ind., not included.
[6] Norfolk, Va., not included.
[7] Fort Smith, Ark., not included.
[8] Seattle, Wash., and Spokane, Wash., not included.

Summary of weekly reports from cities, October 16 to November 19, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927
101 cities	26	20	27	17	24	[3] 19	21	[3] 15	16	[4] 15
New England	19	16	12	19	17	16	9	16	7	23
Middle Atlantic	20	15	14	12	12	20	21	15	21	14
East North Central	12	16	17	13	13	7	10	9	5	[5] 7
West North Central	22	22	24	16	26	24	16	28	6	20
South Atlantic	76	33	75	22	45	31	35	20	22	[6] 27
East South Central	98	31	140	46	103	36	52	5	36	15
West South Central	21	29	39	38	21	59	34	[7] 34	13	29
Mountain	27	81	46	27	91	36	27	9	27	18
Pacific	13	16	19	16	46	[8] 6	29	[8] 7	29	13

INFLUENZA DEATH RATES

	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927
95 cities	7	9	11	8	11	[2] 9	14	8	10	[4] 9
New England	7	5	7	0	12	5	2	2	2	5
Middle Atlantic	8	7	8	4	9	8	10	9	10	7
East North Central	5	5	14	5	6	9	10	5	10	[5] 2
West North Central	2	12	2	6	6	10	13	2	6	10
South Atlantic	8	11	21	13	15	7	17	17	8	[6] 22
East South Central	10	25	10	41	21	15	26	15	31	20
West South Central	13	13	26	17	40	26	66	17	31	34
Mountain	27	18	9	27	18	18	27	18	9	36
Pacific	0	14	7	10	7	[2] 7	14	0	4	8

PNEUMONIA DEATH RATES

	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927
95 cities	86	77	96	91	101	[2] 90	106	104	123	[4] 112
New England	83	86	99	65	99	63	90	95	104	102
Middle Atlantic	104	75	101	92	114	87	115	113	136	119
East North Central	61	66	86	82	85	93	87	89	104	[5] 97
West North Central	49	64	63	69	84	62	76	75	120	81
South Atlantic	113	72	108	88	121	118	140	120	144	[6] 165
East South Central	98	127	134	112	98	112	165	138	171	148
West South Central	53	86	88	190	115	90	110	129	154	142
Mountain	128	144	182	144	164	117	155	144	109	99
Pacific	99	100	88	97	49	[2] 100	99	100	74	76

[2] Tacoma, Wash., not included.
[3] Fort Smith, Ark., Seattle, Wash., and Spokane, Wash., not included.
[4] Fort Wayne, Ind., and Norfolk, Va., not included.
[5] Fort Wayne, Ind., not included.
[6] Norfolk, Va., not included.
[7] Fort Smith, Ark., not included.
[8] Seattle, Wash., and Spokane, Wash., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,028,500	1,008,300	1,028,500
West South Central	8	7	1,218,800	1,248,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

THE FAR EAST

Report for the week ended November 12, 1927.—The following report for the week ended November 12, 1927, was transmitted by the eastern bureau of the health section of the secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Plague, cholera, or smallpox was reported present in the following ports:

PLAGUE

Dutch East Indies.—Makassar.

CHOLERA

India.—Bombay, Calcutta, Madras, Tuticorin.
Straits Settlements.—Singapore.
Dutch East Indies.—Batavia.
China.—Canton.

SMALLPOX

India.—Rangoon.
Ceylon.—Colombo.
Dutch East Indies.—Banjermasin, Samarinda.
Sarawak.—Kuching.

Returns for the week ended November 12 were not received from the following ports:

Iraq.—Basra.
Dutch East Indies.—Padang.
French Indo-China.—Haiphong.
Union of Socialist Soviet Republics.—Vladivostok.

ANGOLA

Communicable diseases—August, 1927.—During the month of August, 1927, communicable diseases were reported in Angola, as follows:

Disease	Coast districts	Interior	Land frontier	Total
Beriberi	6			6
Bilharzia	23	1		24
Chicken pox	2			2
Dysentery	37	21	8	66
Erysipelas	1		3	4
Hemoglobin fever	6	3	2	11
Influenza	119	137	175	431
Leprosy	2		1	3
Malaria	233	89	118	440
Measles	2			2
Mumps	2			2
Pneumonia	40	15	13	68
Puerperal fever		3		3
Relapsing fever		2		2
Scabies	10	2		12
Smallpox	1	1		2
Tetanus	5			5
Tuberculosis	18	11	3	32
Trypanosomiasis	75	17	24	116
Typhoid fever	3			3
Venereal diseases	133	58	30	221
Whooping cough	6			6
Yaws	80	7	26	113

BRAZIL

Mortality, general—Mortality from communicable diseases—Manaos—September, 1927.—During the month of September, 1927, of 139 deaths from all causes reported at Manaos, Brazil, 39 were caused by malaria, 4 by leprosy, 4 by measles, and 21 by tuberculosis. Population, 89,063.

CANADA

Communicable diseases—Week ended November 19, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases from seven Provinces of Canada for the week ended November 19, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever			1			2		3
Poliomyelitis	1	1	1	3			2	8
Smallpox				85	2	14	1	102
Typhoid fever	1	9	10	7	2			29

Communicable diseases—Ontario—October, 1927—Comparative—During the month of October, 1927, communicable diseases were reported in the Province of Ontario, Canada, as follows:

Disease	1927		1926	
	Cases	Deaths	Cases	Deaths
Actinomycosis	2	2		
Cerebrospinal meningitis	3	2	5	1
Chancroid	5		1	
Chicken pox	571		544	
Conjunctivitis, acute infectious	1			
Diphtheria	546	20	429	22
Dysentery		9		
German measles	13		7	
Goiter	1			
Gonorrhea	179		177	
Influenza	9	7		10
Lethargic encephalitis			7	5
Measles	383			383
Mumps	448		25	
Pneumonia		95		128
Poliomyelitis	21	4	27	
Puerperal septicemia		2		
Rabies	1			
Scarlet fever	411	1	351	1
Septic sore throat	7		3	
Smallpox	160		75	
Syphilis	147		173	
Tetanus		1		
Tuberculosis	125	62	96	54
Typhoid fever	128	4	101	10
Whooping cough	275	4	304	3

Smallpox in municipalities.—The greatest number of cases of smallpox reported in the Province of Ontario, Canada, during October, 1927, was in Ottawa, viz, 114 cases. At Toronto 13 cases were reported; at South River, 5 cases. Seven localities reported the occurrence of 1 case each.

Smallpox—East York, Ontario Province.—Smallpox is reported prevalent at East York, Province of Ontario, Canada. Four cases were reported during October, 1927. The disease is said to be mild.

Communicable diseases—Quebec—Week ended November 19, 1927.—The Bureau of Health of the Province of Quebec reports cases of communicable disease for the week ended November 19, 1927, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	1	Poliomyelitis (infantile paralysis)	1
Chicken pox	46	Scarlet fever	113
Diphtheria	84	Smallpox	3
German measles	3	Tuberculosis	15
Influenza	1	Typhoid fever	10
Measles	73	Whooping cough	9

Typhoid fever—Montreal—January 2–November 26, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	June 25, 1927	75	23
Jan. 15, 1927	4	3	July 2, 1927	66	21
Jan. 22, 1927	1	2	July 9, 1927	52	10
Jan. 29, 1927	3	1	July 16, 1927	39	4
Feb. 5, 1927	1	0	July 23, 1927	22	9
Feb. 12, 1927	0	0	July 30, 1927	23	10
Feb. 19, 1927	1	2	Aug. 6, 1927	16	5
Feb. 26, 1927	1	1	Aug. 13, 1927	20	5
Mar. 5, 1927	9	1	Aug. 20, 1927	14	4
Mar. 12, 1927	203	4	Aug. 27, 1927	8	3
Mar. 19, 1927	383	14	Sept. 3, 1927	27	0
Mar. 26, 1927	568	22	Sept. 10, 1927	17	0
Apr. 2, 1927	649	48	Sept. 17, 1927	13	2
Apr. 9, 1927	396	40	Sept. 24, 1927	6	3
Apr. 16, 1927	175	38	Oct. 1, 1927	18	1
Apr. 23, 1927	126	43	Oct. 8, 1927	14	1
Apr. 30, 1927	105	23	Oct. 15, 1927	5	1
May 7, 1927	106	19	Oct. 22, 1927	3	1
May 14, 1927	367	16	Oct. 29, 1927	9	1
May 21, 1927	770	26	Nov. 5, 1927	1	1
May 28, 1927	353	38	Nov. 12, 1927	3	0
June 4, 1927	289	37	Nov. 19, 1927	2	2
June 11, 1927	128	36	Nov. 26, 1927	0	0
June 18, 1927	86	18			

CHINA

Area of pneumonic plague infection—Mongolian frontier.—Further information received under date of[1] October 11, 1927, indicates prevalence of pneumonic plague south of Tungliaochen, on the frontier of Mongolia, where an outbreak with 200 deaths was previously reported.

[1] Public Health Reports Dec. 2, 1927, p. 2992.

ECUADOR

Plague—Smallpox—Guayaquil—October, 1927.—During the month of October, 1927, four cases of plague and one case of smallpox were reported at Guayaquil, Ecuador.

Plague-infected rats.—During the same period, 22,997 rats were reported taken at Guayaquil, of which number 8 rats were found plague-infected.

FINLAND

Influenza—Helsingfors—October 1-15, 1927.—During the half month ended October 15, 1927, 235 cases of influenza were reported at Helsingfors.

GREECE

Mortality from bronchopneumonic influenza—Saloniki—October 4-31, 1927.—The occurrence of 66 deaths from bronchopneumonic influenza has been reported at Saloniki, Greece, for the period October 4 to 31, 1927.

IRAQ

Cholera—Week ended October 22, 1927—Summary to October 22, 1927.—During the week ended October 22, 1927, 95 cases of cholera, with 60 deaths, were reported in Iraq, occurring in seven localities. The greatest number of cases, viz, 35, with 23 deaths, was reported at Amarah. The total occurrence from date of outbreak to October 22 was 926 cases, with 677 deaths.

MADAGASCAR

Plague—September 1-15, 1927.—During the period September 1 to 15, 1927, 85 cases of plague with 76 deaths were reported in the Island of Madagascar. The occurrence was distributed according to locality as follows: Provinces—Antisirabe, cases, 2; deaths, 2; Itasy, cases, 14; deaths, 13; Tananarive, including Tananarive Town, cases, 69; deaths, 61. The distribution according to type of disease was: Bubonic cases, 37; pneumonic, 31; septicemic, 17.

PERU

Mortality from communicable diseases—Arequipa—September, 1927.—During the month of September, 1927, mortality from communicable diseases was reported at Arequipa, Peru, as follows:

Disease	Deaths	Disease	Deaths
Gastroenteritis	3	Tuberculosis	22
Influenza	13	Typhoid fever	1
Measles	2	Typhus fever	1
Scarlet fever	1	Whooping cough	7

Population, estimated, 43,500

VIRGIN ISLANDS

Communicable diseases—October, 1927.—During the month of October, 1927, communicable diseases were reported in the Virgin Islands of the United States as follows:

Island and disease	Cases	Remarks
St. Thomas and St. John:		
Diphtheria	1	Imported.
Fish poisoning	2	
Gonorrhea	7	
Syphilis	9	Secondary, 6; tertiary, 2; congenital, 1.
Tetanus	1	
Tuberculosis	1	Chronic pulmonary.
St. Croix:		
Chancroid	1	
Gonorrhea	3	
Syphilis	7	Secondary. One imported.
Uncinariasis	9	Necator Americanus.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended December 9, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Canton	Oct. 9-29	13	13	
Foochow	Oct. 16-22			Present with several cases.
Shanghai	Oct. 16-22		1	
Swatow	Oct. 23-29			Prevalent.
India:				
Calcutta	Oct 16-22	33	19	
Rangoon	do	2	1	
Iraq				July-Oct. 22, 1927: Cases, 926; deaths, 677.
Amarah	Oct. 16-22	35	23	
Baghdad	do	1	1	
Basra	do	1		
Diwaniyah	do	28	17	
Hillah	do	12	7	
Kerbala	do	3	3	
Kut	do	11	8	
Muntafique	do	4	1	
Siam				Oct. 9-15, 1927· Cases, 8; deaths, 5. Apr. 1-Oct. 15, 1927: Cases, 761; deaths, 518.

PLAGUE

Place	Date	Cases	Deaths	Remarks
British East Africa:				
Tanganyika Territory	Sept. 4-Oct. 1		30	
Uganda	June 1-30	313	203	
Ceylon:				
Colombo	Oct. 16-22	1		1 plague rodent.
China:				
Tungliaochen	Oct. 11			Reported present south of Tungliao.
Ecuador:				
Guayaquil	October, 1927	4		Rats taken: 22,997; found infected, 8.
India:				
Madras Presidency	Oct. 2-8	156	72	
Rangoon	Oct. 16-22	3	3	
Java:				
Batavia	Oct. 9-22	73	72	Province.

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended December 9, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Madagascar				Sept. 1-15, 1927: Cases, 85; deaths, 76. Bubonic cases, 37; deaths, 28; pneumonic cases, 31; deaths, 31; septicemic cases, 17; deaths, 17.
Province:				
Antisirabe	Sept. 1-15	2	2	Bubonic.
Itasy	do	14	13	Bubonic, pneumonic, septicemic.
Tananarive	do	44	36	Do.
Tananarive Town	do	25	25	Do.
Siam				Oct. 9-15, 1927: Cases, 11; deaths, 8.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Angola	August, 1927	2		Coast district, 1 case; interior, 1.
British East Africa:				
Tanganyika Territory	Sept. 11-17	8		
British South Africa:				
Northern Rhodesia	Oct. 9-15	44	1	European, 1; native, 43.
Canada	Nov. 13-19			Cases, 102.
Alberta	do	1		
Manitoba	do	2		
Winnipeg	Nov. 20-26	2		
Ontario				Oct., 1927: Cases, 160; corresponding period, 1926—cases, 75.
Kingston	Nov. 13-19	1		
Ottawa	October, 1927	114		
Toronto	do	13		
Saskatchewan	Nov. 13-19			Cases, 14.
China:				
Foochow	Oct. 16-22			Present.
Manchuria—				
Mukden	Oct. 23-29	1		
Ecuador:				
Guayaquil	Oct. 1-31, 1927	1		
Great Britain:				
England and Wales	Oct. 30-Nov. 12	477		
Leeds	Nov. 6-12	1		
Manchester	do	1		
India:				
Calcutta	Oct. 16-22		1	
Madras	Oct. 23-29	3	1	
Rangoon	Oct 16-22	7	1	
Iraq:				
Baghdad	do	2	1	
Basra	Oct. 9-15	2	2	
Java:				
Batavia	Oct. 16-22	1		Province.
Mexico:				
Guadalajara	Nov. 15-21		1	
Portugal:				
Lisbon	Oct. 9-Nov. 5	6		
Siam				Oct. 9-15, 1927: Cases, 3.

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Peru:				
Arequipa	Sept. 1-30		1	
Poland				Oct. 2-8, 1927: Cases, 9; deaths, 1.
Union of South Africa:				
Cape Province	Oct. 9-15			Outbreaks.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 2, 1927[1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22–Oct. 15	119	11	
Canton	May 1–Oct. 1	89	54	
Foochow	July 24–Sept. 10			Present.
Hong Kong	July 17–Sept. 3	3	3	
Kulangsu	June 21	1		
Shanghai	June 19–25	2		
Do	July 31–Oct. 15		118	In international settlement and French concession.
Swatow	May 15–Sept. 10	138	13	
Tientsin	Aug. 27–Oct. 1	14		
India	Apr. 17–Sept. 24			Cases, 179,664; deaths, 97,933.
Bombay	May 8–Sept. 17	127	57	
Calcutta	May 8–Oct. 15	795	471	
Karachi	May 29–June 4	1	1	
Madras	June 19–Oct. 22	833	442	
Rangoon	May 8–Oct. 8	24	20	
India, French Settlements in	Mar. 30–Aug. 27	253	168	
Indo-China (French)	Apr. 1–Sept. 20			Cases, 15,564.
Annam	do	4,509		
Cambodia	do	408		
Cochin-China	do	1,606		
Saigon	June 4–Oct. 7	12	4	
Laos	July 11–Sept. 20	223		
Tonkin	Apr. 1–Sept. 20	9,818		
Iraq:				
Amarah	Oct. 2–8	10	3	
Baghdad	July 24–30	29	18	
Basra	July 17–Oct. 8	384	289	
Diwaniyah	Oct. 2–8	44	26	
Hillah	do	1		
Kerbala	do	11	7	
Kut	do	1		
Muntafiq	do	5	3	
Japan:				
Yokohama	July 31–Aug. 6	1	1	
Java:				
Batavia	Reported Nov. 19	25	15	
Persia:				
Abadan	July 24–Aug. 13	215	183	
Ahwaz	July 31–Aug. 13	20	13	
Minab	Aug 7–13		23	
Mohammerah	July 17–Aug. 27	194	155	
Nasseri	July 19–31		10	
Philippine Islands:				
Bulacan Province	June 7–July 8	3	2	
Leyte Province—				
Barugo	June 29	1	1	
Carigara	June 23	1	1	Final diagnosis not received.
Palo	May 18	1		
Manila	July 17–Aug. 27	2		
Siam	May 1–Oct. 8			Cases, 366, deaths, 215.
Bangkok	do	53	18	
On vessel.				
S. S. Adrastus	Reported Aug. 6	1	1	At Yokohama, Japan.
S. S. Montreal Maru	Sept. 20			At Muke, Japan.
S. S. Tabaristan	Oct. 6	1		Case in coolie removed at Basra.
S. S. Morea	Sept. 2			At Hong Kong; cholera-infected.
S. S. War Mehtar (oil tanker).	Aug. 4	1	1	At Saffagha, Egypt.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	Aug. 21–Oct. 20	3		
Oran	Aug. 21–Sept. 10	5	4	
Argentina	Jan. 1–Aug. 2			Cases, 80; deaths, 44.
Bahia	Nov. 21	1		In vicinity.

[1] From medical officers of the Public Health Service, American consuls, and other sources.

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CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 2, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Argentina—Continued.				
Province—				
Buenos Aires	Apr. 10–May 7	4	3	
Cordoba	Jan. 11–Aug. 6	52	29	
Do.	Nov. 21	10		Reported as having occurred three weeks previously.
Corrientes	June 1	1	1	
Entre Rios	Mar. 20–Aug. 13	8	1	
Santa Fe	Apr. 28–May 16	4	3	
Territory—				
Chaco—				
Barranqueras	May 29	2	2	
Formosa	June 25	3	2	
Pampa	July 27–Aug. 2	4		
Rio Negro	Aug. 6	1		
City—				
Merou	Reported July 14			Present.
Rosario	May 7	1	1	
Santa Fe	May 16	4	2	
Azores:				
St. Michaels Island	May 15–Oct. 29	12	1	
Ribeira Grande	June 12–18	1		
Brazil:				
Sao Paulo	June 3–9	1	1	
British East Africa:				
Kenya	Apr. 24–July 31	73	14	
Mombassa	July 24–30	1	1	
Nairobi	May 22–28	6		
Tanganyika	Mar. 29–May 28		37	
Do	July 24–Aug. 28		40	
Uganda	Jan. 1–Feb. 28	138	121	
Do	Mar. 27–June 18	469	300	
Canary Islands:				
Laguna district—				
Tejina	June 17	1		
Las Palmas	Oct. 8–11	8		
Ceylon:				
Colombo	May 1–Oct. 1	23	14	Plague rats, 4.
China:				
Amoy	July 3–23			Present in surrounding country.
Mongolia	Reported Oct. 11		200	Approximate.
Tientsin	Aug. 14–20	2		
Tungliao	Reported Oct. 11–15.	200		
Ecuador:				
Guayaquil	June 1–Aug. 31	7		Rats taken, 72,416: found infected, 45.
Egypt:				
Alexandria	June 4–Sept. 2	4		
Beni-Souef	June 4–July 13	5	2	
Biba	June 4–10	1		At Nama.
Dakhalia	June 24–July 9	6	1	
Minia	Aug. 8–9	4		
Port Said	June 24–July 21	4	1	
Suez	Sept. 4	1		
Tanta district	June 4–10	1		
Greece	May 1–June 30	4	3	
Athens	June 1–Aug. 29	3		Including Piraeus.
Mytilene	Aug. 9–Sept. 26	6		
Patras	May 30–Nov. 5	10	3	
Hawaii Territory:				
Hamakua	July 15–Aug. 30			2 plague rodents.
Hawaii:				
Kapulena	Oct. 22			1 plague rodent.
Honokaa	May 17–23	2	2	
Kukuihaele	Aug. 12–17	1	1	Do.
Paauilo	July 26–Aug. 1		4	
India	Apr. 17–Oct. 24			Cases, 25,403; deaths, 11,164.
Bombay	May 8–Oct. 8	104	88	
Calcutta	Aug. 21–Sept. 3	18	10	
Madras	May 1–Oct. 1	1,535	720	
Rangoon	May 8–Oct. 15	78	72	
Indo-China (French)	Apr. 1–Aug. 10	80		
Saigon	Sept. 2–16	2		
Kwang-Chow-Wan	May 21–July 31	73		
Iraq:				
Baghdad	Apr. 8–May 28	12	1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 2, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Java:				
Batavia	May 1-Oct. 8	346	327	Province.
East Java and Madura	May 22-July 16	28	27	
Pasoeroean Residency	May 9			Outbreak reported at Nagdiwano.
Surabaya	Apr. 17-Sept. 24	94	92	
Madagascar				Mar. 16-Apr. 30, 1927: Cases, 256; deaths, 185.
Province—				
Ambositra	Mar. 16-Aug. 15	100	98	
Antsirabe	Mar. 16-Aug. 31	42	42	
Miarinarivo (Itasy)	do	80	70	
Moramanga	May 16-Aug. 31	32	31	
Tananarive	Mar. 16-Aug. 31	281	247	
Tananarive Town	Mar. 16-June 30	22	20	
Mauritius:				
Port Louis	May 1-June 30	1	1	
Nigeria	Mar. 1-May 31	228	117	
Peru	Apr.-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	Apr. 1-July 31	13	8	
Lima City	Apr. 1-30	5	1	
Senegal	May 23-Oct. 16			Cases, 1,159; deaths, 646.
Baol	June 2-Oct. 16	235	109	
Cayor Frontier	July 4-Oct. 23	992	561	
Dakar	June 20-Oct. 2	147	94	
Facel	July 6	17	8	
Guindel	June 20-26	11	2	
Louga district	Sept. 18-Oct. 16	13	4	
M'Bour	July 6-10	28	23	
Medina	June 13-19	2	2	
Pout	July 4-10	1		
Rufisque	May 23-Sept. 25	223	167	
Thies district	do	34	15	
Tivaouane	June 2-July 17	50	32	
Siam	Apr. 1-June 25			Cases, 10; deaths, 7.
Do	Oct. 2-8	1	1	
Bangkok	May 8-June 11	2	1	
Do	Oct. 2-8	1		
Syria:				
Beirut	June 11-Sept. 10	4		
Tunisia	Apr. 21-July 10	144		
Tunis	July 25-Aug. 1	1		
Turkey.				
Constantinople	May 13-19	1		
Do	Sept. 18-Oct. 1	2	1	
Union of South Africa:				
Cape Province—				
Maraisburg district	May 1-14	2	2	Native.
Orange Free State—				
Edenburg district	July 17-26	3	3	Natives; on farm.
Rouxville district	July 24-Aug. 6	2	2	
On vessel:				
S. S. Avoroff	June 24-30	1		Greek warship at port of Athens.
S. S. Capafric	Aug. 23	3	1	At Duala, French Cameroons, from Nigeria.
S. S. Elcano	Aug. 19	1		At Piraeus, Greece.
S. S. Madonna	Aug. 24	1		At Dakar, Senegal, from ports south.
S. S. Ransholm	Aug. 5	3		At Gefle, Sweden, from Rufisque, Senegal.

SMALLPOX

Algeria	Apr. 21-Sept. 20			Cases, 955.
Algiers	May 11-June 30	8		
Oran	May 21-Oct. 29	74		
Angola	June 1-July 31	45		
Loanda	Sept. 1-15	1		
Portuguese Congo	do	4		
Arabia:				
Aden	July 17-Aug. 1	2	1	
Brazil:				
Bahia	Aug. 7-13	1		
Porto Alegre	July 1-Sept. 30	11		
Rio de Janeiro	May 22-Sept. 24	35	21	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 2, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
British East Africa:				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 29-June 18		22	
Do	Aug. 7-28		21	
Zanzibar	Apr. 1-Aug. 31	121	41	
British South Africa:				
Northern Rhodesia	Apr. 30-Oct. 7	287	15	
Canada	June 5-Nov. 12			Cases, 981.
Alberta	June 12-Nov. 12			Cases, 242.
Edmonton	Oct. 23-29	1		
Calgary	June 12-Aug. 27	9		
British Columbia—				
Vancouver	May 23-Sept. 4	4		
Manitoba	June 5-Nov. 5			Cases, 62.
Winnipeg	June 12-Nov. 19	24		
Nova Scotia	Sept. 11-Oct. 15	2		
Halifax	Oct. 8-15	1		
Ontario	June 5-Nov. 12			Cases, 490.
Ottawa	June 12-Nov. 19	239		
Sarnia	Aug. 7-13	1		
Toronto	June 19-Nov. 12	42		
Windsor	Oct. 2-15	9		
Quebec	June 19-Nov. 5	32		
Riviere du Loup	Oct. 29-Nov. 19	6		
Saskatchewan	June 12-Nov. 12			Cases, 170.
Moose Jaw	Aug. 14-Oct. 22	24		
Regina	July 17-Nov. 12	16		
Ceylon	May 1-7			Cases, 3; deaths, 2.
Colombo	July 31-Aug. 6	1	1	
China.				
Amoy	May 8-28	1		
Do	July 3-16			Present in surrounding country.
Antung	July 4-31	3		
Canton	Sept. 18-24	1	1	
Chefoo	May 8-14			Present.
Do	Oct. 9-15			Do.
Foochow	May 8-Sept. 10			Do.
Hong Kong	May 8-Sept. 17	22	21	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-July 30	8		
Dairen	May 2-June 3	10	5	
Fushun	May 15-Sept. 17	11		
Harbin	June 13-July 10	4		
Kaiyuan	July 3-9	2		
Mukden	May 22-Oct. 22	8		
Pensihu	July 3-Oct. 1	2		
Ssupingkai	May 8-July 9	2		
Tientsin	May 8-Oct. 1	30	4	
Chosen	Feb. 1-July 30			Cases, 526; deaths, 211.
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr. 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr. 1-30	1		
Curacao	May 29-June 4	1		Alastrim.
Ecuador:				
Guayaquil	June 1-Aug. 31	4		
Egypt	May 7-Sept. 30			Cases, 21; deaths, 4.
Alexandria	May 21-June 17	4	1	
Cairo	Jan. 22-Apr. 15	14	3	
France	Apr. 1-Aug. 31			Cases, 207.
Lille	July 24-30	1		
Paris	May 21-July 31	14	2	
Gold Coast	Mar. 1-July 31	42	7	
Great Britain:				
England and Wales	May 22-Oct. 29			Cases, 3,999.
Birmingham	Aug. 14-Sept. 30	2		
Bradford	May 29-June 11	2		
Do	Oct. 23-Nov. 5	6		
Bristol	Oct. 16-29	7		
Cardiff	June 19-July 2	4		
Do	Oct. 23-29	1		
Leeds	July 17-Nov. 5	26		
Liverpool	July 17-30	1		
London	May 15-June 18	2		
Manchester	Oct. 2-Nov. 5	4		
Newcastle-upon-Tyne	June 12-Oct. 20	13		
Sheffield	June 12-Oct. 29	37		
Stoke-on-Trent	Aug. 21-27	1		
Scotland—				
Dundee	May 29-Sept. 3	6		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 2, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Greece	June 1-30	14		
Saloniki	July 12-Aug. 15		2	
Guatemala:				
Guatemala City	June 1-30		9	
Guinea (French)	June 4-10	9		
India	Apr. 17-Sept. 24			Cases, 77,885; deaths, 20,509.
Bombay	May 28-Oct. 8	250	158	
Calcutta	May 8-Oct. 15	417	319	
Karachi	May 15-Aug. 6	10	5	
Madras	May 22-Oct. 22	39	8	
Rangoon	May 8-Oct. 8	202	159	
India, French Settlements in	Mar. 20-Aug. 27	174	155	
Indo-China (French)	Mar. 21-Sept. 20			Cases, 332.
Saigon	May 14-Sept. 9	4	1	
Iraq:				
Baghdad	Apr. 10-Oct. 1	8	4	
Basra	Apr. 10-Sept. 17	9	8	
Italy	Apr. 10-May 21	13		
Rome	June 13-July 17	3		Including consular district.
Jamaica	May 29-Oct. 29	47		Reported as alastrim.
Japan	Apr. 3-May 7			Cases, 19.
Nagasaki City	June 20-Aug. 14	26	7	
Taiwan Island	May 21-31	1		
Java:				
Batavia	May 22-Nov. 12	35	15	
East Java and Madura	Apr. 24-Sept. 30	45	1	
Latvia	Apr. 1-30	1		
Mexico	Mar. 1-June 30			Deaths, 621.
Acapulco	Aug. 28-Sept. 17	2	2	
Durango	June 1-30		1	
Monterey	July 1-31	6	4	
San Luis Potosi	May 29-Aug. 13		11	
Tampico	June 1-July 31	1	2	
Torreon	Aug. 7-Oct. 1		2	
Morocco	Apr. 1-Aug. 31	288		
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in 2 localities.
Pasir Residency	Apr. 30-May 6			Epidemic outbreak.
Samarinda Residency	May 21-27			Do.
Nigeria	Mar. 1-July 31	2,844	653	
Paraguay:				
Asuncion	July 10-23		2	
Persia:				
Teheran	Feb. 21-July 23		16	
Poland	Apr. 10-Aug. 6	20	2	
Portugal:				
Lisbon	May 29-Oct. 8	26	1	
Oporto	Sept. 3-9	1		
Senegal:				
Medina	July 4-10	7		
Siam	Apr. 1-Oct. 8			Cases, 253; deaths, 67.
Bangkok	May 1-Sept. 10	16	8	
Spain:				
Madrid	Aug. 1-31		1	
Valencia	May 29-June 4	3		
Do	Sept. 25-Oct. 1	1		
Straits Settlements	June 12-18			Cases, 3.
Singapore	Apr. 1-June 18	7	2	
Sumatra:				
Medan	June 5-Aug. 20	3		
Switzerland:				
Berne	June 26-July 2	1		
Syria:				
Damascus	Aug. 11-Oct. 20	30		
Tunisia	Apr. 1-June 10			Cases, 10.
Tunis	June 1-10	1		
Union of South Africa:				
Cape Province	July 7-Aug. 20			Outbreaks.
Do	Oct. 2-8			Do.
Elliott district	May 11-June 10			Do.
Idutywa district	July 3-9			Do.
Kalanga district	May 11-June 10			Do.
Mount Ayliffe district	July 31-Aug. 6			Do.
Orange Free State	Aug. 7-13			Do.
Transvaal—				
Barberton district	May 1-7			Do
Venezuela:				
Maracaibo	July 12-Oct. 3		4	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 2, 1927—Continued

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-July 20			Cases, 399; deaths, 39.
Algiers	May 11-Oct. 20	34		
Oran	May 21-Aug. 31	34		
Argentina:				
Rosario	Aug. 1-31		1	
Bulgaria	Mar. 1-Aug. 10			Cases, 245; deaths, 21.
Sofia	June 4-Nov. 4	20	1	
Chile:				
Antofagasta	Apr. 16-May 31	1		
Do	Sept. 25-Oct. 1		1	
Concepcion	May 29-June 4		1	
La Calera	Apr. 16-May 31	1		
Ligua	Mar. 16-31	2		
Puerto Montt	Apr. 16-May 31	1		
Santiago	do	5	1	
Talcahuano	July 10-16		1	
Valparaiso	Apr. 16-Sept. 3	5	3	
China:				
Manchuria—				
Harbin	July 25-Aug. 21	5		
Mukden	May 29-June 4	1		
Tientsin	July 10-24	3		
Chosen	Feb 1-July 31			Cases, 793; deaths, 68.
Chemulpo	May 1-Aug. 31	3		
Gensan	do	4		
Seoul	Apr. 1-Aug 31	35	3	
Czechoslovakia	do			Cases, 55.
Egypt	May 28-Sept. 30			Cases, 133; deaths, 22.
Alexandria	May 21-Aug. 5	13	5	
Cairo	Jan. 15-July 1	43	16	
Port Said	Sept. 24-30	1		
Estonia	Apr. 1-June 30			Cases, 5.
Greece	June 1-30	2		
Athens	June 1-July 31		9	
Guatemala:				
Guatemala	Aug. 25-31		1	
Iraq:				
Baghdad	Apr. 24-30	1		
Irish Free State:				
Cork County	July 3-9	1		In urban district.
Donegal County—				
Letterkenney	Oct. 16-22	4		
Latvia	Apr. 1-July 31	32		
Lithuania	Feb. 1-Aug. 31	365	50	
Mexico	Feb. 2-June 30			Deaths, 166.
Mexico City	May 29-Nov. 5	95		Including municipalities in Federal District.
San Luis Potosi	July 31-Aug. 6		1	
Morocco	Apr. 1-Sept. 20	981		
Palestine	May 24-Oct. 10			Cases, 32.
Haifa	do	10		
Jaffa	Aug. 2-Oct. 3	3		
Jerusalem	June 28-Aug. 15	3		
Mahnaim	May 17-23	1		In Safad district.
Nazareth	July 19-25	1		
Safad	May 17-Aug. 8	10		
Tel Aviv	Oct. 1-10	1		
Peru:				
Arequipa	Apr. 1-30		1	
Do	Aug. 1-31		2	
Poland	Apr. 10-Oct. 1	1,133	105	
Portugal:				
Lisbon	May 29-June 4	1		
Oporto	Aug. 20-27	1		
Do	Oct. 23-29	1		
Rumania	Apr. 3-Aug. 27	1,000	69	
Spain:				
Seville	Aug 19-25		2	
Syria:				
Aleppo	Sept. 11-17	2		
Tunisia	Apr. 22-July 20			Cases, 158.
Tunis	July 5-Aug. 21	2		
Turkey:				
Constantinople	May 13-19		2	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 2, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Union of South Africa	Apr. 1-30			Cases, 55; deaths, 8, native. In Europeans, cases, 2.
Cape Province	Apr. 1-Oct. 8	42	5	
Albany district	June 5-11			Outbreaks.
East London	May 22-28	1		Do.
Glen Gray district	May 1-7			Do.
Kentani district	June 26-July 2			Do.
Port Elizabeth	Aug. 7-13	1		Do.
Qumbu district	May 1-7			Do.
Umzimkulu district	June 26-July 2			Do.
Natal	Apr. 1-Aug. 6	7	3	
Impendhle district	June 5-11			Do.
Orange Free State	Apr. 1-Oct. 1	5		
Transvaal	Apr. 1-30	1		
Johannesburg	July 3-Aug. 20	19	5	
Do	Oct. 9-15	5		
Yugoslavia	May 1-Oct. 31			Cases, 25; deaths, 5.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Ashanti:				
Obuasi	Aug. 6	1	1	
Dahomey (West Africa):				
Porto Novo	July 1	1	1	In Syrian woman.
Gold Coast	Apr. 1-June 30	60	22	
Do	Aug. 4	2		
Ivory Coast	July 29	1	1	
Liberia:				
Monrovia	May 29-Sept. 10	5	5	
Senegal	Oct. 3-23			Cases, 29; deaths, 22.
Dakar	July 9	1		
Do	Aug. 8		2	
Do	Sept. 17			Present.
Do	Oct 3-16	12	7	
Geoul	Sept 26-Oct. 2	1	1	
Island of Goree	Aug 22-Sept 4	2	2	
Kebemer	Oct. 9-23	2	2	
Kelle	do	2	1	
Khombole	Aug. 1-Oct 9	6	3	
Louga	Sept 26-Oct 2	1	1	
Mehke	Oct. 17-23	1		
M'Bour	May 27-June 19	5	5	
N'Dande	Oct. 17-23	1	1	
Ouakam	June 2-Aug. 14	4	2	
Pout	Sept. 19-25	1	1	
Rufisque	Oct 9-16	1	1	
Sebikotane	Oct 17-23	1	1	
St. Louis	Aug. 1-Oct. 2	3	3	
Thies	July 10	1	1	In European.
Do	Sept. 12-Oct 23	11	11	
Tiaroye	Aug. 22-Sept. 4	1	1	
Tivaouane	May 27-Sept. 11	6	5	
Togoland:				
Melatza	Aug. 15-21	1	1	
On vessel:				
S. S. Desirade	Sept. 16	1	1	At Leixoes, Portugal, in Passenger from Dakar, Senegal.

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TREASURY DEPARTMENT

PUBLIC HEALTH REPORTS

ISSUED WEEKLY

BY THE UNITED STATES PUBLIC HEALTH SERVICE

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SPECIAL ARTICLES

Tetanus Following Smallpox Vaccination

Disposal of Zyklon-B Residue After Fumigation

UNITED STATES
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UNITED STATES PUBLIC HEALTH SERVICE

HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

Asst. Surg. Gen. R. C. WILLIAMS, *Chief of Division*

The PUBLIC HEALTH REPORTS are issued weekly by the United States Public Health Service through its Division of Sanitary Reports and Statistics, pursuant to acts of Congress approved February 15, 1893, and August 14, 1912.

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PUBLIC HEALTH REPORTS

VOL. 42 DECEMBER 16, 1927 NO. 50

PREVALENCE OF SMALLPOX IN THE UNITED STATES

At this season of the year an increase in the prevalence of smallpox is usual, but this year the reports indicate somewhat more cases of this disease in November than were reported in 1925 or 1926.

The health officers of 41 States reported 452 cases of smallpox for the week ended November 19, 1927; 593 cases for the following week, and 559 cases for the week ended December 3, 1927.

Data from 43 States are available for the week ended December 3, 1927, and the corresponding weeks of 1925 and 1926. These States reported 444 cases for the week in 1925, 595 cases in 1926, and 570 cases for the week in 1927.

PREVALENCE OF POLIOMYELITIS IN THE UNITED STATES

Poliomyelitis is more prevalent this month than it usually is in December. During the week ended December 3, 1927, 42 States reported 172 cases of poliomyelitis. For the corresponding week of 1926 these States reported 34 cases, and in 1925 they reported 37 cases for the week. These figures do not include Ohio, as weekly reports for that State are not available for 1925 and 1926. Ohio reported 22 cases for the week in 1927.

For the week ended November 19, 1927, 42 States (including Ohio) reported 297 cases of poliomyelitis. The following week these States reported 195 cases, and for the week ended December 3, 1927, they reported 193 cases.

Reports for the week ended December 10, 1927, will be found on page 3086 of this issue of the Public Health Reports.

TETANUS FOLLOWING VACCINATION AGAINST SMALLPOX, AND ITS PREVENTION

With Special Reference to the Use of Vaccination Shields and Dressings

By CHARLES ARMSTRONG, *Surgeon, United States Public Health Service*

For a number of years the United States Public Health Service has been deeply interested in post-vaccination tetanus. Studies directed toward determining the origin of the contaminating tetanus

organism led, in 1917, to the detection of *B. tetani* on "bone-point" scarifiers by McCoy and Bengtson (1). In 1925 this organism was demonstrated in bunion pads which were found to be used occasionally as a vaccination dressing (2). The examination of other commercial dressings, of needles, of capillary tubes, and of mild antiseptics occasionally used on vaccination lesions has failed to reveal the presence of *B. tetani*. Moreover, extensive tests at the Hygienic Laboratory, using various methods, have failed to demonstrate the presence of the organism in commercial vaccine. We are therefore left to conclude that the occasional cases of post-vaccination tetanus which are not explainable on the basis of the two positive findings above mentioned must be due to the presence of the specific organism at the local site at the time of vaccination, or to its subsequent introduction. Certainly the possibility of such accidental contamination can not be denied. We should, of course, always be vigilant to insure that vaccination materials are free from contamination; but it would seem that much might also be accomplished by directing our efforts toward eliminating conditions at the vaccination site which are favorable for the development of tetanus in case the specific organism does gain entrance thereto.

VACCINATION CIRCUMSTANCES SURROUNDING THE DEVELOPMENT OF POST-VACCINATION TETANUS

A study of the individual cases of post-vaccination tetanus (Table 1) which have developed in this country over a period of several years has revealed the following facts:

1. Without exception the lesions were covered during all or part of their active course by some sort of shield or dressing strapped to the vaccination site.
2. The cases in the great majority of instances were vaccinated by a large insertion—¼ to ⅝ inch in diameter.
3. The cases of post-vaccinal tetanus, for which the data are available, have without exception followed primary "takes."

TABLE 1.—*Vaccination methods used in cases developing tetanus*

Method of insertion	Type of dressing used							
	Shields	Gauze	Bunion pads	Gauze and shield	No dressing early, shields later	Adhesive bandage	No dressing	Total
Abrasions (¼ to ⅝ inch) scarifications	30	22	13	1	1			67
Multiple linear incisions, 2 to 12 in one locality	7	6	2	2	1			18
Single linear incision	2	1		1		1		5
Unknown	5	3						8
Total	44	32	15	4	2	1		98

RELATION TO SEVERE "TAKES"

As noted above, several factors which tend to produce severe "takes" were present in the cases which we have investigated, namely, high susceptibility to vaccinia (primary vaccinations), large insertions, and the use of shields and dressings. That the great majority of the "takes" were actually severe, was indicated by the presence of large ulcerated areas in the cases seen during the attacks, by the size of the scars in recovered cases, and by the descriptions of the lesions as given by physicians and relatives in instances in which the lesions or scars could not be inspected by the writer. The fact that post-vaccination tetanus tends to develop only among severe primary "takes" indicates that some special condition found in such "takes" is necessary before tetanus will develop from vaccinations contaminated with *B. tetani* under ordinary conditions. Certainly there is no reason to assume that the bacilli would not occasionally gain entrance to secondary as well as to primary vaccinations, whatever the origin of the infection may be.

Anderson (3), Willson (4), and others believed that the tetanus organism gained entrance to the "take" about the tenth day or later. They based this conclusion upon the fatal nature of the tetanus (75 to 80 per cent being fatal), upon the long interval from vaccination to onset of symptoms (usually about 21 days),[1] and upon the failure to find tetanus organisms in vaccine virus.

The contention of these writers is not necessarily correct, however, since those cases which followed the use of infected bone-point scarifiers were of a severe type and showed the same long intervals from vaccination to onset of symptoms.

The more probable explanation of this long interval is that the tetanus organism, whenever it may be introduced, is incapable of developing before conditions such as are found from the 10th to the 14th day in severe primary "takes" covered by dressings have developed.

Let us now observe whether or not an undue proportion of the cases of post-vaccination tetanus has followed particular vaccination methods. By referring to Table 1 it will be seen that in most instances post-vaccinal tetanus has followed large abrasions or scarifications, which, in every case, were during all or part of their course covered by some type of shield or dressing strapped to the arm or leg. Unfortunately, we are unaware of the relative number of persons vaccinated by various methods in the United States during the period of this study, hence the data are not susceptible of statistical treatment. However, we do know that in recent years a

[1] As is well known, ordinary tetanus of this fatality usually shows an incubation period of less than 10 days.

considerable proportion of individuals have been vaccinated by small insertions, without dressings, and it would seem that the absence of post-vaccinal tetanus in this group is significant. Moreover, we have made local studies wherein the numbers vaccinated by various methods could be determined and have found a disproportionate number of post-vaccination tetanus cases to have been associated with certain vaccination procedures which tended to produce severe local "takes."

INFLUENCE OF SHIELDS AND DRESSINGS ON THE "TAKES"

The malign influence of shields and dressings is apparentl not fully realized by all vaccinators. Let us therefore consider the manner in which they influence a vaccination.

Dressings held by adhesive bands tend, when swelling occurs, to restrict the flow of blood and lymph, thus favoring stasis. This effect is especially marked when a shield is employed, since any pressure exerted on the shield is transmitted through its margin to the immediate circumference of the insertion. A shield, moreover, must be rather snugly applied, otherwise it moves and comes in contact with and irritates or ruptures the vesicle. The heat and moisture retained by artificial coverings tends to soften the vesicle and to lead to an exudation of serum, pus, etc., which is retained at the vaccination site. This accumulation of *moist* exudate tends to produce maceration and constitutes a medium for the growth of proteolytic bacteria. Even though the original insertion be small the lesion will often develop under these conditions until it fills the shield. Thus the benefit of a small insertion may be lost through the influence of the dressing. Gauze dressings become embedded in the exudate, and when they are removed the vesicle is ruptured. Some cut the gauze away, leaving the attached portion embedded in the exudate where it constitutes a foreign body.

Under the influence of dressings, especially when neglected, a foul-smelling, necrotic ulcer may develop. This would seem to be favorable for the development of tetanus, since a foul odor was noted prior to the onset of tetanus symptoms in approximately 75 per cent of the cases investigated as to this point. If such foul-smelling lesions ever develop in vaccinations kept cool and dry—conditions favored by omitting dressings—the writer has not encountered them.

In relation to the use of dressings it is of some interest to note that the writer has failed to find any reference to tetanus complicating smallpox, a disease in which the body may be covered with lesions resembling a vaccination but which are of necessity treated openly.

INFLUENCE OF THE SHIELD IN EXPERIMENTAL POST-VACCINAL TETANUS

Francis (5), in 1914, failed to produce tetanus among eight monkeys, each vaccinated in five places with a virus heavily contaminated with tetanus spores, though the animals developed good "takes." Two calves vaccinated with a similar mixture on the abdomen and thighs likewise failed to develop the disease. Anderson (3) (1915) tried with similar methods, using guinea pigs, but also with negative results. In these attempts no dressings were employed. It was deemed advisable, therefore, to endeavor again to produce the complication experimentally, employing various types of commercial shields and dressings.

MONKEYS

Twenty monkeys were vaccinated in a single site on the thorax, about 1 inch from the vertebral column. The site was shaved, and a mixture of equal parts of a highly potent virus and a heavy suspension of a virulent strain of *B. tetani* (group III by agglutination) was well rubbed in on an area 1 inch in diameter. The amount of the mixture applied was 0.6 c. c. to 0.8 c. c.

Dressings, held in place by a 3-inch band of adhesive tape were applied to all the animals for the first 18 hours. At the end of that time they were removed from the control monkeys and the lesions left uncovered, while in the remainder they were not disturbed unless to replace them in a few instances where the animals' efforts at removal had been partially successful. In applying the adhesive band a hole was cut to accommodate the dressing in order to permit of the usual ventilation with each type. In the case of the celluloid shields it was found necessary to cover the "cap" with a light wire gauze, fitted to the shield, in order to prevent its being torn away.

Three additional monkeys were vaccinated as above, but with insertion one-fourth inch in diameter; that is, in an area only one-sixteenth of that used above. A shield was applied and retained in each case. This was to determine whether a small insertion with a shield showed any advantage over a larger one similarly dressed. All these animals died of tetanus and when the dressings were removed, the ulcers filled the shields just as in the cases with the larger insertions.

TABLE 2.—*Results in monkeys vaccinated with vaccine-tetanus mixture treated with and without dressings of various types*

Monkey No.	Date vaccinated, 1927	Diameter of insertion	Quantity of virus-tetanus mixture used	Dressing [1]	Result	Date of onset of tetanus	Date of death	Symptoms	Tetanus organisms recovered	Local production of toxin demonstrated	Autopsy
1	Feb. 19	1 inch	0.8 c. c.	Shield A	Tetanus	Feb. 26	Feb. 28	Typical	+	No attempt	Consistent with tetanus.
2	Mar. 9	do	do	do	do	Mar. 21	Mar. 25	do	+	Yes	Do.
3	Apr. 7	do	do	do					–		Uncomplicated vaccinia [2].
4	do	do	do	None					–		Do.
5	Apr. 23	do	do	Shield A					–		Do.
6	do	do	do	None					–		Do.
7	Sept. 14	do	do	Shield A	Tetanus	Sept 23	Sept. 25	Typical	+	Yes	Consistent with tetanus.
8	do	do	do	do	do	Sept. 24	do	do	+	Yes	Do.
9	do	do	do	do					–		Uncomplicated vaccinia [2]
10	do	do	do	None					–		Do.
11	do	do	do	do					–		Do.
12	do	do	do	do					–		Do.
13	Oct. 6	do	do	Shield B	Tetanus	Oct. 14	Oct. 15	Typical	+	Yes	Consistent with tetanus.
14	do	¼ inch	do	do	do	do	Oct. 16	do	+	Yes	Do.
15	do	do	do	do	do	Oct. 18	Oct. 18	do	+	Yes	Do.
16	do	do	do	do	do	do	do	do	+	Yes	Do.
17	do	1 inch	do	do	do	Oct. 14	Oct. 19	do	+	Yes	Do.
18	do	do	do	Dressing C	do	Oct. 19	do	do	+	Yes	Do.
19	do	do	do	Shield B	do	Oct. 17	Oct. 17	do	+	Yes	Do.
20	do	do	do	Dressing C					–		Uncomplicated vaccinia [2]
21	do	do	do	None	Tetanus	Oct. 24	Oct. 25	Typical	+	Yes	Consistent with tetanus.
22	do	do	do	do					–		Uncomplicated vaccinia.[2]
23	do	do	do	do					–		Do.[2]

[1] Shield A, celluloid cap type; shield B, bunion pad type with celluloid top; dressing C, several folds of sterile gauze covered by band of perforated adhesive. None, indicates no dressing after first 18 hours.

[2] No autopsy; animal recovered.

From Table 2 it will be seen that among 15 animals vaccinated with the virus-tetanus mixture and dressed throughout the course of the vaccination with shields or dressings (types noted in the table), there were 11 cases of tetanus, all fatal, a rate of 73.3 per cent. The period from vaccination to onset of symptoms ranged from 7 to 13 days. Among 8 animals similarly treated, but with dressing for only the first 18 hours after vaccination, there was 1 case, also fatal, a rate of 12.5 per cent. In this case the onset of symptoms was relatively late, being on the eighteenth day.

Character of the experimental "takes" in monkeys.—The difference in the character of the "takes" in the monkey treated with and without dressings was striking. In vaccinations which were covered the lesions were large, deep, moist, necrotic, and stinking; while in those treated openly the lesions were moist for only a few days at most, then became crusted and proceeded to heal. The one control animal which developed tetanus was a wild creature, and whenever approached would spring to the farthest corner of his cage; in this way he repeatedly knocked off the vaccination scab. At the time of his death the lesion had healed considerably, but the upper portion was covered by a scab one-half inch to three-quarter inch in diameter in which was embedded a considerable amount of shavings from his bedding. Beneath the scab was a collection of pus; there was no fetid odor.

DIAGNOSIS OF TETANUS IN THE EXPERIMENTAL CASES

Rigidity of the front leg on the side of the "take" was usually the first symptom noted; later general spasticity, typical convulsions, trismus, and opisthotonos or emprosthotonos would develop. The development of tetanus toxin at the "takes" was demonstrated in every case, except one in which no attempt was made to do so, by excising and macerating the wound in 100 c. c. of saline and injecting 0.5 c. c. of this extract into white mice. This dose uniformly killed the mice within 24 hours, while control mice which received the same dose plus tetanus antitoxin remained well. Tetanus organisms were recovered from the lesions in all the fatal cases. The incubation periods in the experimental cases (Table 2) were shorter than is usual in clinical cases; but it should be remembered that vaccinia develops more readily in monkeys than is the rule in primary vaccinations in man, and that the virus used was heavily seeded with *B. tetani.*

RABBITS

Twenty rabbits were vaccinated with the same virus-tetanus mixture, using methods identical with those described for the monkeys. One insertion, 1 inch in diameter and located on the thorax

about 1½ inches from the vertebral column, was employed. Ten animals were without dressings after 18 hours; in the remainder the dressings were permitted to remain throughout the experiment. By referring to Table 3 it will be noted, that among the ten animals on which dressings (types indicated in the table) were used, there were 8 cases of tetanus, whereas among 10 similarly treated, but with no dressings after 18 hours, there were no cases of tetanus. There were two deaths among this group, but the symptoms resembled snuffles and no toxin could be demonstrated in the excised "takes." The period from vaccination to onset of tetanus symptoms is indicated in Table 3 and ranged from 9 to 15 days.

Character of the "takes" in rabbits.—The animals without dressings developed severe "takes" (fig. 1) which soon became covered with dry, firm scabs and proceeded to heal. The animals with shields likewise developed severe "takes" (fig. 2), and at the time of death the lesions were moist, but the necrosis and accumulation of exudate were much less than in the case of the monkeys. In only one instance was a foul odor noted, and it was not very pronounced.

Diagnosis of post-vaccinal tetanus in rabbits.—The earliest symptom usually noted was an alert, hyper-excitable condition of the animal. This was soon followed by rigidity of one or more legs which would rapidly progress until the animal was twisted and drawn into abnormal positions. Later generalized convulsions and death would ensue. The diagnosis of post-vaccination tetanus was confirmed in every instance by excising and macerating the lesion in 100 c. c. of saline and injecting 0.4 c. c. of this extract into white mice. This dose uniformly killed the mice within 24 hours, except in the case of rabbit No. 2. In this case the mouse showed severe symptoms of tetanus but lived for several days. Control mice which received the same doses of extract plus tetanus antitoxin remained well in every case.

PREVENTION

It is realized that the malign influence of dressings on monkeys and rabbits vaccinated with a virus purposely contaminated with *B. tetani,* is not in itself conclusive evidence against the use of vaccination dressings in man. However, the experimental evidence is in such complete accord with the epidemiological evidence concerning 98 human cases as to constitute a strong confirmatory argument against dressings; in fact, the combined evidence seems strong enough to suggest that the practical elimination of post-vaccination tetanus may be accomplished by a general application of certain fundamentals of a proper vaccination technique.

Vaccination procedure.[2]—The essential factors of a proper technique will be briefly considered in the order of their probable importance.

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[2] Those desiring a detailed consideration of the many phases of vaccination should consult Surg. J. P. Leake's "Questions and Answers on Smallpox Vaccination (6)."

Fig 1 —Rabbit No 15 (No dressing after 18 hours) Photograph taken on sixteenth day after vaccination

Fig 2 — Rabbit No 7 (Dressed with a celluloid shield) Photograph taken on sixteenth day after vaccination and a few hours before death from tetanus Note opisthotonos The shield is shown elevated from the lesion

TABLE 3.—*Results in rabbits vaccinated with vaccine-tetanus mixture treated with and without dressings of various types*

Rabbit No.	Date vaccinated, 1927	Diameter of insertion	Quantity of virus-tetanus mixture used	Dressing used [1]	Result	Date of onset of tetanus	Date of death	Symptoms	Tetanus organisms recovered	Local production of toxin demonstrated	Autopsy
1	Oct. 26	1 inch	0 8 c. c.	Shield B	Tetanus	Nov. 4	Nov 10	Typical	+	Yes	Consistent with tetanus.
2	do	do	do	do	do	Nov. 9	do	Not typical	+	Yes	Peritonitis; toxin at "take."
3	do	do	do	do	do	Nov. 8	do	Typical	+	Yes	Consistent with tetanus.
4	do	do	do	do	do	do	do	do	+	Yes	Do.
5	do	do	do	Shield A	do	do	Nov. 9	do	+	Yes	Do.
6	do	do	do	do	do	Nov 6	Nov 7	Not seen	+	Yes	Do.
7	do	do	do	do	do	Nov 10	Nov 11	Typical	+	Yes	Do.
8	do	do	do	Dressing C	do	Nov. 4	Nov. 5	do	+	Yes	Do.
9	do	do	do	do					–		Uncomplicated vaccinia.[2]
10	do	do	do	do					–		Do.[2]
11	do	do	do	None			Nov. 6	Snuffles	+	No	Snuffles and vaccinia.
12	do	do	do	do			Nov 11	do	+	No	Do.
13	do	do	do	do					–		Uncomplicated vaccinia.[2]
14	do	do	do	do					–		Do.[2]
15	do	do	do	do					–		Do.[2]
16	do	do	do	do					–		Do.[2]
17	do	do	do	do					–		Do.[2]
18	do	do	do	do					–		Do.[2]
19	do	do	do	do					–		Do.[2]
20	do	do	do	do					–		Do.[2]

[1] Shield A, celluloid cap type; shield B, bunion pad type with celluloid top; dressing C, several folds of sterile gauze covered by band of perforated adhesive. None, indicates no dressing after first 18 hours.
[2] No autopsy; animal recovered.

1. *Dressings*.—No local covering to be applied. Keep cool and dry. When these directions are observed and follow a proper type of small insertion, the lesions will usually retain their own natural covering—the epithelium itself—and will usually develop a dry scab without having become an open lesion at any time. Should an open lesion develop (as occasionally happens) through injury, an antiseptic dressing may be desirable for a few days. A few layers of gauze pinned to the inside of a loose-fitting sleeve is probably best. If attached to the arm the dressing should be large and the adhesive straps applied loosely and as far from the vaccination site as possible. Shields and dressings are often purchased and applied without the knowledge or consent of the physician, and warning should therefore always be given against the danger which such practice entails.

2. *Insertion*.—Second only in importance to the dressing is the character of the insertion, which should be *small*, never more than one-eighth inch in its greatest diameter, and is best made by some method which does not remove the epidermis. The multiple pressure method advocated by Surg. J. P. Leake is admirable (6). This method consists in making 20 to 30 shallow tangential pricks of the cleansed but not irritated skin through a drop of virus in an area not over one-eighth inch in diameter. A new, sharp needle should be used. The point is not driven directly into the skin, but the side of the needle point is pressed against it, then lifted free, by a series of rapid, up-and-down motions. The virus is wiped off immediately.

3. *Method of cleansing the skin*.—Many solutions are satisfactory; we usually use acetone. The important thing is—*gentleness!* Too vigorous rubbing abrades the epidermis and may enable the virus to multiply outside the intended insertion.

4. *Site*.—The insertion of the deltoid is probably the best location for vaccination. Leg vaccination in persons who are up and about is inadvisable.

5. *Age*.—Primary vaccinations are best performed during the first year of life, since it is a well-established fact that infant vaccinations tend to run a milder course than do primary vaccinations performed later, and, furthermore, the child is protected against smallpox during a period in which it would otherwise be susceptible. The infant, moreover, is confined to an environment which would seem to offer less opportunity for accidental contamination of his vaccination. The custom of performing the first vaccination at about the sixth year (entrance to school) would seem to be a less favorable practice, since at this age the child's sanitary sense is not developed and his outdoor play brings him in contact with an environment more likely to be contaminated with tetanus organisms. These considerations may explain the fact that boys are more subject to post-vaccination tetanus than girls.

SUMMARY

1. Epidemiological evidence is presented which indicates that post-vaccination tetanus, when it develops, tends to follow severe primary vaccinations performed with large insertions and dressed with some type of shield or covering strapped to the site.

2. Shields and dressings are shown markedly to predispose to the development of post-vaccination tetanus in monkeys and rabbits vaccinated with virus artificially contaminated with *B. tetani.*

3. A proper vaccination is defined as one in which the insertion is not over one-eighth inch in its greatest diameter, made by some method which does not remove or destroy the epidermis. Such insertions treated openly, i. e., without the use of shields or dressings strapped to the site, have never, in so far as we are aware, been followed by post-vaccination tetanus. It seems probable that the adoption of these simple procedures of technique on the part of vaccinators, coupled with a proper warning to the vaccinated individual, or his parents or guardian, concerning the dangers of home-applied shields and dressings, would eliminate tetanus as a complication of vaccination.

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A REPORT ON THE DISPOSAL OF ZYKLON–B RESIDUE FOLLOWING THE FUMIGATION OF THE HOLDS OF VESSELS

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CLEARING TESTS IN SHIP FUMIGATION

In the method of ship fumigation with Zyklon–B at present employed at the New York quarantine station, the practice is to remove all the residue and throw it overboard before clearing the vessel. A series of tests was undertaken to determine whether it would be prac-

tical and safe to leave the residue in the holds following fumigation, which would permit of a better distribution and avoid the necessity of placing the fumigant within a restricted space, as on a piece of canvas.

Careful clearing tests were made on a series of 10 vessels undergoing routine fumigation with Zyklon-B at the port of New York in which the residue was well scattered over the holds of the vessels and allowed to remain as scattered.

The following table shows the results of these tests:

TABLE NO. 1.—*Results of clearing tests in holds*

Ship No. and class	Hold No.	Capacity, in cubic feet	Ounces of HCN used	Clearing time, minutes	Weather condition	Local condition
1. Cargo vessel	1	90,669	180	170	Clear; slight breeze	Difficult; vessel located between high docks.
	2	143,392	280	40		
	3	31,255	60	150		
	4	111,149	220	160		
	5	72,372	120	120		
2. Cargo vessel	1	69,130	140	60	Clean and warm; very slight breeze	Ventilation poor; holds sheltered by superstructure and docks.
	2	111,135	220	140		
	3	80,360	160	80		
	4	50,645	100	90		
3 Cargo vessel	1	27,191	60	40	Cloudy; slight mist, fair breeze	Very good, holds small and exposed to breeze.
	2	47,157	100	50		
	3	31,816	60	60		
	4	33,131	80	70		
4. Cargo vessel	1	54,100	120	45	Clear; good breeze	Excellent; holds exposed to breeze
	2	58,400	120	35		
	3	83,500	160	25		
5. Cargo vessel	1	98,128	200	60	Cloudy; air damp, good breeze	Good, vessel exposed to breeze
	2	168,826	320	50		
	3	78,223	140	30		
	4	78,773	140	15		
6. Cargo vessel	1	71,100	140	15	Clear, good breeze	Excellent; holds exposed to breeze
	2	97,300	200	25		
	3	46,380	100	40		
	4	85,000	180	55		
	5	53,070	120	65		
7. Cargo vessel	1	92,070	180	95	Clear; very slight breeze.	Poor, no breeze, account high docks
	2	105,840	220	85		
	3	28,600	60	70		
	4	76,780	160	110		
	5	85,630	180	50		
8. Passenger vessel	1	98,176	200	150	Clear; slight breeze	Poor, deep holds protected by superstructure and docks.
	2	108,000	220	50		
	3	82.000	140	150		
	4	86,000	180	40		
9. Cargo vessel	1	57,740	120	30	Clear; fair breeze	Hold No. 3 damp from rain and sheltered by superstructure
	2	75,500	150	40		
	3	64,200	120	75		
	4	30,720	60	55		
10 Cargo vessel	1	92,432	180	25	Clear cool; good breeze	Favorable; holds deep but dry.
	2	98,981	200	30		
	3	61,735	120	45		
	4	113,064	230	55		
	5	36,355	80	60		

NOTE.—As each vessel was cleared by testing the holds in rotation, beginning with hold No. 1, it frequently happened that the other holds were clear before the test of the first hold was completed. For this reason, the clearing time of hold No 1 is the best criterion on those vessels on which the holds were cleared in consecutive order.

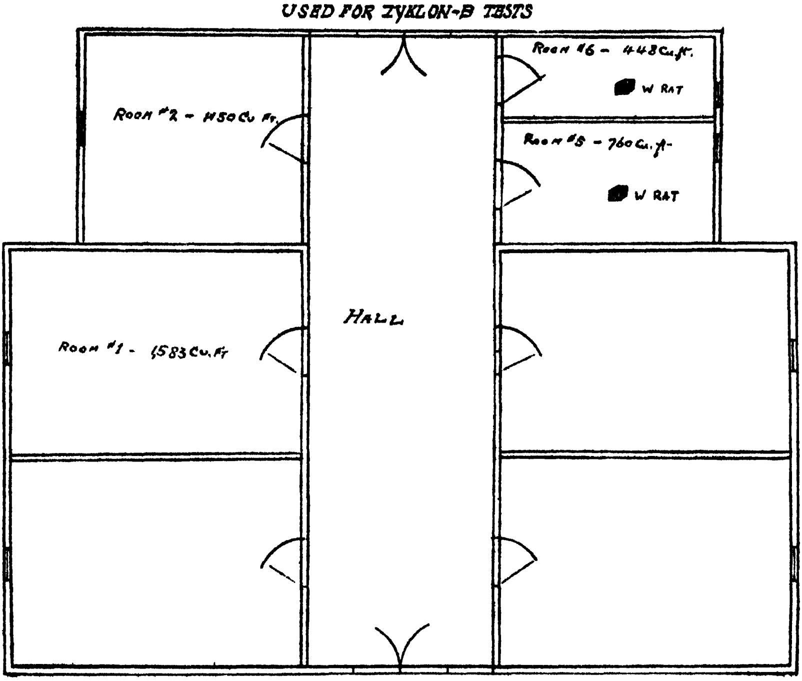
The method followed in determining whether the holds were clear of gas after fumigation was to lower white rats in a cage to the bottom of the hold and observe them for signs of agitation during a period of 10 minutes, and also to make use of a methyl orange-mercuric

chloride filter-paper test, which is sensitive to approximately 0.1 ounce HCN per 1,000 cubic feet of air space, equivalent to 5 per cent of the concentration of gas used in fumigation. When both tests were negative, further observations by means of taste and smell were made during the actual inspection of the holds.

LABORATORY TESTS OF RESIDUE

As a check on the practical results of allowing the residue to remain in holds after ship fumigation, 75 grams of residue of Zyklon–B which had been used in routine fumigation was gathered up, after

ROOMS ON HOFFMAN ISLAND USED FOR ZYKLON-B TESTS



two hours' fumigation and one hour's airing, in a tightly stoppered glass bottle and was brought to the laboratory and placed with a white rat in a large glass jar containing $1\frac{1}{3}$ cubic feet of air space. The top of this jar was covered with heavy paper and the rat was observed for a period of 19½ hours, during which time it showed no signs of agitation and was unaffected when released.

ROOM TESTS

Following the above test, a series of tests was undertaken at Hoffman Island, in a vacant building containing two rows of outside rooms with a large central hallway between them. These rooms

have walls of brick and tile construction and concrete floors, and are plastered and painted on the inside. The measurements as to air-space capacity are shown in the accompanying diagram. Rooms No. 5 and No. 6 contained ¾-inch holes in the doors, with stoppers to fit, through which the rats were observed.

In making these tests, the results of which are shown in Table 2, the residue was gathered up on paper and transferred to the smaller rooms, in which a white rat in a wire cage was placed about 24 inches from the floor. During these tests all the rooms were made practically gas-tight by pasting paper over doors and such places as might permit of the escape of gas, particular care being taken in this regard with the two small rooms in which the rats were placed with the Zyklon-B residue.

TABLE 2.—*Residue tests in rooms*

Test No	Room No.	Air space	Amount HCN used	"Standard" amount	Exposure	Aired	Residue removed to—	Air-space	Rat exposed	Results
		Cu ft.	*Oz.*	*Oz.*	*Hrs*	*Hr.*		*Cu ft.*	*Hrs*	
1.	1	1,583	4	3.16	2	1	Room No 6	760	21	Unaffected.
2.	2	1,150	4	2.3	2	1	Room No 5	448	21	Do
3.	1	1,583	8	3 16	2	1	Room No 6	760	21	Do.
4	2	1,150	8	2 3	2	1	Room No 5	448	21	Do
5.	1	1.583	12	3 16	2	1	Room No 6	760	21	Do
6.	2	1,150	12	2.3	2	1	Room No 5	448	21	Do
7.	1	1,583	8	3.16	2	1	Room No 6	760	21	Do.
8.	2	1,150	16	2 3	2	1	Room No 5	448	21	Do.
9.	1	1,583	4	3 16	2	1	Glass jar	2 36	21	Do.
10.	2	1,150	4	2 3	2	1	do.	2.36	3	Dead

In using the term "standard amount" a concentration of 2 ounces of hydrocyanic acid gas per 1,000 cubic feet of air space, as used in routine ship fumigation, is indicated.

Comments.—In conducting these tests a concentration of gas from slightly above standard, as in test No. 1, to seven times standard, as in test No. 8, was used. In removing the HCN in test No. 1 to a smaller, gas-free room, the amount of residue used was two and six-tenths times greater than the amount of residue obtaining in the standard concentration used in ship fumigation, and in test No. 8 the amount used was eighteen times greater.

In tests No. 9 and No. 10 an increase in HCN of about 27 per cent over "standard" amount was used, and the residue was placed in glass jars closed with wax paper and of 2.36 cubic feet of air space, a space one six-hundred-and-seventieth as large as that involved in routine fumigation with an equal quantity of Zyklon-B. The fact that it took three hours to kill a white rat in test No. 10 and that the rat in test No. 9 survived shows that while a small amount of gas (probably chloropicrin) is retained in the residue, it is very far below the minimum lethal dose under open atmospheric conditions such as obtain following ship fumigation.

As the minimum time allowed under present regulations for the clearing of holds of vessels following fumigation is one hour, this period of time was adopted in conducting these tests as being the shortest possible period of airing that the fumigant would undergo in routine fumigation.

Hydrocyanic acid gas being readily absorbed and slowly released by water, it is evident that Zyklon–B can not be scattered on a wet floor of a hold or dumped into a bilge without materially increasing the clearing time of a vessel. For this reason *extreme care should be exercised not to throw the fumigant into the bilges or upon wet surfaces.* Canvas should be used when the floors of the holds are wet. In these tests, both on shipboard and ashore, Zyklon–B was scattered in such a manner as to allow the floor to be easily seen through the residue.

It should be emphasized that these restrictions relate to the holds of vessels and not to the superstructure. As Zyklon-B is corrosive (solvent) to painted or finished surfaces, it should not be used in furnished compartments of the superstructure without interposing heavy paper or waterproof canvas on the floors.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Malaria. Rockefeller Foundation, International Health Board, Thirteenth Annual Report (1926), pp. 111–142. (Abstract by A. L. Dopmeyer.)

Field investigations.—Location of station was changed from Leesburg, Ga., to Edenton, N. C., in order to study a different type of malaria problem. Two major projects were concentrated on during the year, attention being directed toward ecological studies of anopheline mosquitoes. Another major project dealing with county-wide elimination of malaria by means of spleen surveys was begun late in the year. Attention was also given to incidence of sporozoites in the glands of Anopheles mosquitoes; the stage of ovarian development; and the relation of these to the probable age of captured females.

An anopheline control program was undertaken by the station and the town of Edenton. No draining was done and culicines were ignored. Paris green was relied upon to control Anopheles breeding. The actual per capita cost to the town was $0.027.

The board continued to assist in the operation of a training station in malaria control in Corsica. A malaria laboratory was installed at Bastia. A movement was started in Corsica with a view to the development of malaria control from local funds. Experiments were also carried on in Corsica with the use of Paris green and Gambusia, both with satisfactory results.

Laboratory studies.—Studies were continued of possible substitutes for quinine, and the use of the precipitin reaction in the diagnosis of latent malaria was studied.

Malaria control in rural areas in the United States.—On account of satisfactory results obtained in malaria campaigns in towns and cities and the completeness of this work, the board directed its activities to control of malaria in rural areas where the population is sparse, and the per capita income low. General

mosquito control in such areas was found to be not feasible, and since studies indicate that A. *quadrimaculatus* only is responsible for the transmission of malaria, it was considered advisable to concentrate on the destruction of this one type alone and ignore all others. During the year, a tentative plan of malaria control was formulated on the basis of the county as a unit. Contributions were made to the development of health bureaus in 7 States, and 26 county health unit budgets were assisted.

Demonstrations in Italy.—Cooperation with the Government of Italy consisted in: (1) Experiments in intensive antimalaria work in five stations with resident medical directors, technical assistants, visiting nurses and field agents; (2) extension work in five villages under supervision of these stations; (3) studies in malaria epidemiology and the evaluation of certain control measures in four zones. At the end of the year there were 12 field projects in operation, divided into three groups, as follows: (1) field laboratories; (2) units for extension work in malaria control in villages adjacent to the field laboratories; (3) stations for surveys and field studies. Results of the work indicated that intensive quininization is invariably more expensive than larva control. Studies were made on the following: (1) Systematic study of Anopheles; (2) the effect of minimum doses of X-ray on chronic cases of malaria with and without concomitant doses of quinine; (3) study of the epidemiology of malaria in connection with land reclamation on a large scale; (4) studies of the value of top minnows in the reduction of Anopheles mosquitoes.

A malaria project in Porto Rico.—Assistance to the Porto Rico Health Department was continued in making a malaria control demonstration at Fajardo. The control methods employed were quininization and larva control. More than two-thirds of the persons suffering with malaria completed the standard eight weeks treatment, 85.6 per cent of which were found negative after treatment. This procedure is expensive, however, and increasing emphasis has been placed on antilarva work. Studies of irrigated cane fields resulted in changes, so that irrigation water has been practically eliminated as a source of Anopheles breeding. Rain water is, however, more important from a malaria standpoint. Observations indicate definitely that *A. albimanus* is the important vector of the area. The records indicate a marked reduction of malaria in the Fajardo area during the year. The following field studies were started in 1926: (1) Feeding and resting habits of Anopheles; (2) infectivity rates in *A. albimanus* and *A. grabhamii;* (3) habits of mosquitoes with a view to improved methods in determining their density; (4) methods of control in mangrove swamps, particularly as to value of automatic tide gates; (5) relative value of different kinds of screening material in localities near the ocean; (6) feasibility of simultaneous control of mosquito breeding and growth of vegetation in ditches by covering ditches with cane straw supported by mangrove sticks; (7) value of a gate in a creek permitting water to change its course at short intervals to control breeding.

Continuation of control in the Philippine Islands.—Cooperation with the Philippine Health Service was continued in developing a malaria program. Program included control demonstrations, field research in malaria, malaria surveys and training of medical and subordinate personnel.

The essential method of control was the use of Paris green as a larvicide. There occurred reductions of from 82 to 91 per cent in malaria in four areas where work was conducted. In one province control measures were continued on the sugar haciendas, with the result that in 1926 there was less than one-third the number of malaria cases of the average of the two preceding years. A malaria control section was established in the central office of the insular health service; $50,000 was appropriated for the work in 1927.

Control work in the Argentine.—Malaria control measures were initiated in the Province of Tucuman under a five-year cooperative program which went into effect January 1, 1926. Two towns were selected for demonstration purposes, which showed that *Anopheles pseudopunctipennis* was the immediate vector of the disease. All methods for controlling Anopheles were used, including closed and open drainage, filling, use of Paris green, oil and top minnows. Results were satisfactory. Epidemiological studies were also conducted by representatives of the board and the United States Bureau of Entomology.

A four-year cooperative program in Brazil.—This program, which was inaugurated in the States of Rio de Janeiro in 1925, was continued. Control of Anopheles larvæ was secured by the use of oil and Paris green and quininization of all recurrent infections was carried out, but the most important control measure was drainage. Reduction in mosquito breeding has been satisfactory.

Preliminary work in Panama.—The Government approved plans for the installation of a drainage system in the city of Aguadulce and village of Procri. Efforts to reduce malaria among pupils are being made in several schools. Examination of over 22,000 children in nine Provinces disclosed that nearly 61 per cent had definitely enlarged spleens.

Control measures in Nicaragua.—Work in Nicaragua was limited to five places. In Managua it was found that oiling and draining were not sufficient to control Anopheles breeding. Paris green was introduced as a measure of control with extraordinary success, at a cost of 5 cents per capita per year. It is estimated that a per capita cost of 10 cents will eliminate malaria from Managua through the extensive use of Paris green on the lake front.

Palestine.—A sanitary engineer was loaned to Palestine to assist putting into effect control measures outlined by a previous survey. Before the end of the year he completed surveys of two areas.

Cooperation in Spain.—A study of malaria prevalence showed that Caceres furnished about 20 per cent of the 300,000 cases of malaria reported each year, and a program for control in this Province was undertaken, consisting of epidemiological study of the infected areas; investigation of the use of Paris green as a larvicide; the establishment of a portable laboratory service; and study of the effect of Gambusia in mosquito control. The success of the Paris green work was so pronounced that it was believed feasible to use it on a large scale.

Malaria training in the Mokatow demonstration unit, Poland.—This demonstration unit, which is being conducted in Warsaw, continued to provide training facilities in practical malaria work for students at the School of Hygiene, Warsaw, and others. Field activities included examination of types of breeding places; dipping for larvæ; and their identification. 882 school children were examined for enlarged spleens which were detected in 36 cases.

Two New Sandflies from Bombay. T. C. McCombie Young and B. S. Chalam. *Indian Journal of Medical Research*, vol. 14, No. 4, April, 1927, pp. 849–862. (Abstract by L. M. Fisher.)

Two insects, one *P. Chalami*, n. sp., the other *P. colabaensis*, n. sp., are described. Both were collected in municipal latrines in Colaba between September 25,1926, and October 5, 1926. Only one specimen of *P. colabaensis* was obtained. Points of resemblance and difference between *P. Chalami* and Indian and Singalese species are enumerated.

P. colabaensis is said to differ from four Indian species tabulated by Sinton as having erect hair on the dorsum of the abdomen: They are *P. sergenti*, *P. papatasii*, *P. major*, and *P. argentipes*. The points of difference are enumerated.

Annual Report of Sanitary Engineer, Republic of Haiti for Fiscal Year 1925–26. December, 1926. 189 pages. (Abstract by I. W. Mendelsohn.)

This is a report of the activities of the Public Health Service of Haiti, the sanitary engineer, who is the head of the service, being an officer of the Medical Corps of the United States Navy. The United States Navy has detailed commissioned and noncommissioned officers of the Medical Corps to administer the public health service, these being placed in charge of various districts and administrative units. The activities of the divisions of sanitation, quarantine, hospitals, and miscellaneous sections are given.

Haiti is smaller in area than Maryland. About one-fifth of the 10,200 square miles consists of coastal plains and flood plains of small rivers. There is one well-watered plateau at an elevation of 1,200 feet. The population is unaware of present sanitary habits, and agriculture and industry are not sufficiently developed to provide necessary funds for sanitary works.

Malaria control measures.—The only efficient mosquito host of malaria in Haiti is *Anopheles albimanus*, which breeds up to elevations of 2,500 feet, and wherever collections of water occur. The late summer and winter is the period of greatest malarial incidence, following the rainy season of May to October.

In many sections of Haiti for years to come the only measure which can be applied against malaria will be the administration of quinine to those actually sick. Small towns and villages are located right in the middle of swampy areas.

A system of examination of school children for splenic enlargements is described and results are given which show that in some rural schools there is from 50 to 60 per cent of malarial infection as determined by the splenic index. This record shows that the incidence of malaria on the island follows the rain curve provided no control measures are in operation.

During the spring of 1924 an extensive Anopheline survey of Port au Prince and vicinity showed *A. albimanus* to breed practically all over the city. The various springs and swampy tracts along the shore line were overgrown with weeds and despite the presence of mosquito-destroying fish (*Paecilia sphenops* and *Gambusia dominicencis*), contained many anopheline larvæ. The swampy sections along the shore line of the city proper have been filled in, cement drains have been built along the streets, rock drains, a ditch filled with rocks and covered with dirt, have been made by the hundreds with the result that as far as mosquito breeding is concerned this part of the city is in excellent condition. The simple expedient of cutting down all vegetations in the swampy region along the shore caused a rapid drying up of large areas. In the upper part of the swampy area numerous rice paddies and potato patches were found. The local method of producing these vegetables includes damming up water for the purpose of continuous watering, and as a consequence we have continuous mosquito breeding. These practices have been stopped in the vicinity of the city. The area is now being drained by the introduction of a series of canals. The bottom and part of the sides are lined with one-third sections of 32-inch cement pipes, thus permitting free drainage from the upper layer of the soil and at the same time allowing free flow from the spring proper. Small circumscribed areas are too low for drainage and will be filled.

Water supply.—The various intestinal infectious diseases are quite common in Haiti, due to lack of knowledge of sanitary measures on the part of the majority of the population. The city of Port au Prince is supplied with water from seven surface springs located in three different localities. Chlorinating apparatus has been ordered to sterilize the city water supply. Information is given as to the measures instituted in controlling typhoid fever in the city in 1926 due to infected water.

Sanitation.—In Port au Prince night soil is removed at night from latrines by hired men who transport the matter in boxes on their heads to the sea. Refuse is used to fill in swampy areas in and near the town.

Organization of the Public Health Services in Latvia. H. J. Cazeneuve. League of Nations Bulletin, C. H. 283, July 3, 1925. 72 pages. (Abstract by I. W. Mendelsohn.)

Since 1920 the public health department has been reorganized. It is attached to the Ministry of the Interior and consists of central health, pharmaceutical, and veterinary services. The Central Health Service includes a health and statistical epidemiology section, administrative section, and budget section. One of the duties of the health and statistical epidemiology section is to exercise a general control of the health supervision services in town and country, of waterways and sewage, of industrial undertakings and of foodstuffs and provisions. No sanitary engineers or sanitary inspectors are employed, but, when necessary, the health department calls on the services of experts to deal with special questions.

Water supply.—The public water supplies are derived from springs, artesian and other wells. Some sections of the cities are not served with the public water supply. The wells in the country districts are generally contaminated. Serious attention must be given to the matter of public water supplies.

Latvia is subject to typhoid fever outbreaks. In 1924 (first 10 months) the number of notified cases was 1,356 out of a population of 1,900,000. This situation is ascribed to impure water supplies and defective sewerage.

Sewerage.—There are only a few sewerage systems in the cities and these do not serve all sections. The small towns have no sewers and use more or less water-tight pits, which are periodically emptied.

Houses.—In several towns there are numerous old and overcrowded houses. There are no governmental regulations regarding dwellings.

Malaria.—There were 286 notified cases in 1924. Although there are certain conditions favorable to development of the anopheles mosquitoes, malaria is still rare in Latvia. Anopheles mosquitoes exist in rural districts around the towns.

Cholera in Shanghai in 1926. R. C. Robertson and C. C. P. Anning. *U. S. Naval Bulletin,* vol. 25, No. 4, October, 1927, pp. 944–947. (Abstract by Herbert Hargis.)

The epidemic of cholera which occurred in Shanghai during the summer of 1926 with special reference to treatment is discussed by the authors. There were 3,140 Chinese cases notified and 76 foreign; 1,165 occurred within the international settlement. The chief causes were: (1) Contact with previous case, 20; (2) water contamination, 84; (3) ice, 122; (4) food contamination, process unknown, 145; (5) fly infection, 118; (6) infection from excreta, 4; (7) melon contamination, 236; (8) fruits, 42; (9) untraced, 394. More than one-third of the deaths occurred before the patients had been in the hospital 12 hours.

The authors reached the following conclusions: (1) That with adequate hygienic precautions, cholera should not affect the foreign population in Shanghai; (2) that when cases reach the hospital in the early stages, cholera is no longer a fatal disease; (3) uremia and clinical acidosis were the most serious complications noted in this series of cases.

Experimental Studies of Water Purification. (Discussion of *B. coli* results obtained from primary experiments). H. W. Streeter. *Public Health Reports,* Reprint No. 1170, July 15, 1927, pp. 1841–1859. (Abstract by W. L. Havens.)

Consideration is directed toward the following: "(1) The numerical interpretation of the results of individual *B. coli* tests; (2) the effects on the relationships above noted resulting from conversion of the *B. coli* data from terms of the *B. coli* index to those of the 'most probable numbers' of *B. coli;* (3) the relations between the indicated average *B. coli* densities in the unchlorinated and chlorinated filter effluents resulting from calculations based on two different systems

of sample dilutions; (4) the results of a parallel comparison of *B. coli* enumerations based on fermentation tube tests and of the acid-colony count obtained from direct platings of samples on the Ayers-Rupp medium."

Seven tables, 4 diagrams, and 18 pages of discussion lead to the following conclusions: "(1) That the quantitative expression of the results of routine *B. coli* tests in terms of the 'most probable numbers' yields average figures which, though more nearly representative of the true density of *B. coli* in a given water than are those based on the ordinary *B. coli* index, do not alter materially the basic relationship between the raw water and the various effluents in this respect, on which the main conclusions to be derived from the primary series of experiments depend; (2) that the indicated maximum 'most probable numbers' of *B. coli* in the raw water consistent with producing a chlorinated filter effluent conforming to the revised United States Treasury Department standard approximates 9,000 per 100 cubic centimeters, the corresponding maximum, as expressed in terms of the Phelps index, being 6,000 per 100 cubic centimeters. The maximum raw water *B. coli* content consistent with producing an unchlorinated effluent meeting the same standard is indicated as being approximately 100 per 100 cubic centimeters, as expressed in terms both of the *B. coli* index and the 'most probable numbers;' (3) the inclusion of tests of filter effluents, both unchlorinated and chlorinated, in portions of samples less in volume than 10 cubic centimeters (*a*) gives decidedly higher average indicated densities of *B. coli* in these effluents and (*b*) yields results which appear to be more consistent with those obtained from geometric-series dilutions than does the exclusion of such tests; (4) for bacterial densities falling within the range of the ordinary plate count, the acid-colony count on the Ayers-Rupp medium gives results which are of the same general order of magnitude numerically as the 'most probable numbers' of *B. coli*, as determined by the fermentation-tube test."

Statement is further made that *B. coli* densities in terms of the "most probable numbers" are more expressive, and that because of statistical advantages and greater precision they will come into wider use. For routine plant control, the index will continue as standard enumeration and the results so expressed will be consistent with those which evaluate the "most probable number" of bacteria.

Report of the Division of Water Supply Control, Department of Health, City of Chicago. Pp. 410–476. (Abstract by H. H. Gerstein.)

After a water-borne typhoid fever outbreak in October and November, 1923, it was realized that more careful supervision over chlorination of the water supply was necessary and a sanitary engineer was appointed to supervise this work. A survey of the chlorination equipment showed that it was in bad physical condition and that the capacity was inadequate to properly chlorinate the water. One hundred and fifty thousand dollars was appropriated in 1924 to purchase the latest type chlorination equipment, with capacity sufficient to deliver 0.75 p. p. m. of chlorine at maximum pumpage.

The total amount of chlorine used rose from 699,111 pounds in 1923 to 1,267,387 in 1924 and 1,253,129 in 1925.

There are numerous tables in the report giving summaries of turbidity and bacteriological determinations of the water supply.

The division of water supply control, in addition to the supervision of chlorination, studied possible sources of pollution of the public water supply at cribs, tunnels, tunnel shafts, and in the distribution system.

A sanitary survey of the lake front was begun in 1924 in cooperation with the United States Public Health Service and the Sanitary District of Chicago, to study the pollution of the southern end of Lake Michigan. Lake dumping of grossly

contaminated dredged material from the Chicago River was strictly supervised. Dumping of refuse on the shore of the lake was allowed only behind tight breakwaters. Studies were made of the sanitary quality of the water at bathing and swimming pools.

A survey of the city for cross connections between the public water supply and private water supplies disclosed 428 cross connections, of which 179 were direct and 249 indirect; 85.3 per cent of these cross connections were removed at the end of 1925.

The State Water Commission. Anon. *Health*, New Haven Department of Health, vol. 54, No. 9, September, 1927, pp. 3–5. (Abstract by J. H. O'Neill.)

Increasing pollution of the waterways of Connecticut has led to the creation of a State water commission by the legislature of 1925. The commission began to function March 1, 1925.

The commission is an independent body evidently created to provide an agency to deal with pollution per se. Nowhere in the act is there any indication that it was intended as a health measure. Since previous legislation has placed certain responsibilities upon the State department of health in connection with sewerage and sewage treatment, close cooperation is necessary to prevent overlapping of activities.

The commission is empowered wherever pollution is found to exist to issue an order directing that measures shall be instituted to reduce, control or eliminate such pollution. The law provides that the particular system or means to be operated must be specified by the commission and further, that the cost of installation, maintenance, and operation shall not be unreasonable or inequitable. The policy of the State Water Commission is to stress the necessity for treating raw sewage before its discharge into the waterways of the State as the factor of most urgent importance in carrying out its allotted task.

Sterilization of Potable Waters by Electrolysis. Daniel Chevrier and Max Salles. Compt. rend. 185, 230–1 (1927). From *Chemical Abstracts*, vol. 21, No. 20, October 20, 1927, p. 3407. (Abstracted by A. Papineau-Couture).

"Potable water is sterilized by electrolyzing under 110–20 v. The cathode is a metal cylinder and the anode a platinum wire placed at the axis of the cathode and of as small a diameter as possible without appreciable heating by the current. The distance between the electrodes is just sufficient to allow the water to flow and the evolved gases to escape. The sterilizing action is attributed to the formation of O_3 and of free chlorine. Even if formation of O_3 is neglected, a water containing 1 mg. organic matter (expressed in terms of required O) and 15 mg. chlorides can liberate chlorine equivalent to 2 mg. O, thereby ensuring destruction of all organic matter (including bacteria) and leaving a slight residual bactericidal effect."

How Health Department Controls New York State Water Supplies. C. A. Holmquist. *Water Works Engineering*, vol. 80, No. 20, September 28, 1927, pp. 1413–1414 and 1438. (Abstract by W. L. Havens.)

In the State of New York the department of health has control over the sanitary quality of existing water supplies under the public health law, while under the conservation law the State Department of Conservation has jurisdiction in approving new or additional sources of supply. These two departments have operated in close cooperation and with no overlapping of authority.

The public health law has been revised from its original form so that it no longer requires the approval of a county or supreme court judge to make the rules enacted by the State Commissioner of Health effective. The law has also been amended so that the water supply authorities of New York may now make rules and regulations for the protection of the supply, subject to the approval of the State Department of Health.

The more important features of the law now provide that the city benefited must bear the expense of preventing pollution of its water supply unless such pollution constitutes a public nuisance or menace to health. Bathing, boating, or fishing in water-supply reservoirs is generally prohibited, as is the use of cross connections between potable and questionable supplies. Active supervision over the quality of all supplies and over filtration and chlorination plants is carried out by the health department. Reports of operation are filed with the department regularly. This supervision has already resulted in a noted improvement in the water supplies of the State.

Controlling Oil Pollution of Water. Almon L. Fales. *Water Works Engineering*, vol. 80, No. 18, August 31, 1927, pp. 1251–1252 and 1271–1275. (Abstract by Frank Raab.)

The presence of oil in water imparts a disagreeable taste and odor and interferes with coagulation, filtration, and chlorination. The following are chief sources of oil pollution: Oil burning and oil cargo vessels; ship repair yards; oil terminals and refineries; oil fields; gas plants; sewers and other industrial plants where oil is used as fuel. Oil discharged by vessels even far out at sea is carried into territorial waters by winds, tides, and currents. Oil refineries and oil terminals constitute an important source of oil pollution on the Atlantic and the Gulf coast. The salt water discharge from oil fields carries much oil.

The Bureau of Mines in cooperation with the American Petroleum Institute and the American Steam Ship Owners Association, has made an investigation of handling oil-contaminated water and the oil pollution act of 1924 was the result. This act makes it unlawful to discharge oil into or upon the coastal navigable waters of the United States from any oil burning or oil transporting vessel. A report on oil pollution made by the War Department in connection with the oil pollution act lists the following sources of serious pollutions: Oil; coal mining washery wastes and acid mine drainage; coal distillation; metal trades—pickling, cleaning, and plating wastes; pulp and pulp mills; tanneries; textile industries—washing, bleaching, and dyeing wastes; miscellaneous—distilleries, storage batteries, service stations, rubber reclaiming, canning factories, creameries, and chemical plants.

It is reported that oil-pollution conditions have improved considerably in recent years and indications are that the oil-pollution problem is well on the way of solution.

DEATHS DURING WEEK ENDED DECEMBER 3, 1927

Summary of information received by telegraph from industrial insurance companies for the week ended December 3, 1927, and corresponding week of 1926. (From the Weekly Health Index, December 7, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Dec. 3, 1927	Corresponding week, 1926
Policies in force	69, 585, 309	66, 183, 596
Number of death claims	13, 358	12, 548
Death claims per 1,000 policies in force, annual rate	10. 0	9. 9

Deaths from all causes in certain large cities of the United States during the week ended December 3, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, December 7, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Dec. 3, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Dec. 3, 1927 [2]
	Total deaths	Death rate [1]		Week ended Dec 3, 1927	Corresponding week 1926	
Total (66 cities)	6,924	12.4	[3] 12 6	704	[3] 742	[4] 58
Akron	32			3	7	33
Albany [5]	44	19.1	21 1	8	1	167
Atlanta	69			10	7	
White	41			6	2	
Colored	28	(6)		4	5	
Baltimore [5]	224	14.3	12.6	13	25	41
White	165		11.6	12	20	48
Colored	59	(6)	18.4	1	5	16
Birmingham	78	18.9	17.6	8	8	
White	39		15.1	5	2	
Colored	39	(6)	21.4	3	6	
Boston	203	13.3	14 2	21	26	59
Bridgeport	28			4	0	68
Buffalo	135	12 8	13 0	19	20	80
Cambridge	25	10.5	12.8	3	5	53
Camden	31	12.2	13 1	5	5	86
Canton	25	11 5	8.5	4	1	96
Chicago [5]	719	12.1	11 9	70	61	61
Cincinnati	152	19 2	16.8	15	13	91
Cleveland	163	8.6	9 1	19	16	51
Columbus	66	11 8	15.2	5	3	46
Dallas	57	14 2	12.3	4	5	
White	40		9 8	4	4	
Colored	17	(6)	29 3	0	1	
Dayton	50	14 5	13.3	4	9	66
Denver	76	13 7	15 0	8	6	
Des Moines	29	10 1	8.6	3	1	53
Detroit	256	10 0	10 1	39	35	60
Duluth	17	7 7	9.3	3	0	65
El Paso	29	13 3	12.9	2	6	
Erie	28			2	3	43
Fall River [5]	38	14 9	14 7	7	4	120
Flint	28	10 2	8.4	5	2	79
Fort Worth	22	7.0	8 8	1	5	
White	17		7.8	1	3	
Colored	5	(6)	16 2	0	2	
Grand Rapids	28	9 2	12 7	3	2	44
Houston	61			7	11	
White	45			5	8	
Colored	16	(6)		2	3	
Indianapolis	96	13.4	13.7	7	8	53
White	82		13.1	7	5	61
Colored	14	(6)	18.0	0	3	0
Jersey City	76	12.3	11.0	7	5	53
Kansas City, Kans	29	12.9	15.6	2	2	42
White	25		11.9	1	2	25
Colored	4	(6)	33.1	1	0	145
Kansas City, Mo	75	10.2	12.4	7	8	
Knoxville	24	12.3		6		
White	18			6		
Colored	6	(6)		0		
Los Angeles	225			18	24	51
Lowell	25	11.8	17 5	1	7	21
Lynn	18	8.9	9.0	2	3	55
Memphis	63	18.4	14 5	13	6	
White	36		11 0	4	3	
Colored	27	(6)	20 7	9	3	
Milwaukee	127	12.5	9 6	13	15	60
Minneapolis	95	11 2	10 1	4	5	23
Nashville	47	17 8	14.5	6	9	
White	24		10.6	2	4	
Colored	23	(6)	24 1	4	5	
New Bedford	27	11.8	7 9	2	4	38
New Haven	62	17.5	7 4	4	1	56
New Orleans	155	19.1	17 8	19	18	
White	92		15.5	7	10	
Colored	63	(6)	24 4	12	8	

See footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended December 3, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926—Continued

City	Week ended Dec. 3, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Dec. 3, 1927
	Total deaths	Death rate		Week ended Dec. 3, 1927	Corresponding week 1926	
New York	1,302	11.4	11.8	138	133	58
Bronx Borough	159	9.0	9.4	14	13	45
Brooklyn Borough	448	10.3	10.7	62	59	65
Manhattan Borough	517	14.9	15.6	48	42	57
Queens Borough	134	8.6	8.3	11	15	49
Richmond Borough	44	15.6	13.2	3	4	57
Newark, N. J.	100	11.2	10.2	13	17	65
Oklahoma City	43			4	3	
Omaha	67	10.0	13.3	6	6	68
Paterson	41	14.8	12.0	8	2	144
Philadelphia	537	13.8	14.5	53	60	72
Pittsburgh	169	13.7	13.3	16	25	56
Portland, Oreg	79			2	7	21
Providence	62	11.5	11.0	5	4	43
Richmond	45	12.2	11.6	3	4	39
White	24		8.6	1	2	20
Colored	21	(6)	18.8	2	2	73
Rochester	76	12.2	9.4	6	5	51
St. Louis	234	14.5	16.0	22	30	
St. Paul	60	12.5	10.5	4	3	37
Salt Lake City [5]	32	12.3	18.8	3	5	48
San Antonio	36	8.9	12.0	6	8	
San Diego	29	13.1	17.9	6	0	132
San Francisco	145	13.1	14.6	6	9	37
Schenectady	27	15.1	7.8	2	3	60
Seattle	67			4	5	43
Somerville	20	10.2	12.5	2	2	58
Spokane	28	13.4	20.6	1	7	24
Springfield, Mass	26	9.2	13.3	0	4	0
Syracuse	42	11.1	11.2	3	5	39
Tacoma	20	9.7	14.8	1	3	23
Toledo	67	11.5	15.0	8	10	76
Trenton	47	17.9	16.7	5	5	89
Utica	35	17.7	18.3	3	3	70
Washington, D. C	137	13.2	14.8	12	21	70
White	91		14.3	6	15	52
Colored	46	(6)	16.4	6	6	109
Waterbury	14			4	1	93
Wilmington, Del	29	12.0	11.3	3	2	74
Worcester	36	9.6	12.4	2	4	24
Yonkers	26	11.4	12.6	2	8	46
Youngstown	35	10.8	9.8	3	4	40

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 65 cities.
[4] Data for 61 cities.
[5] Deaths for week ended Friday, Dec. 2, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks Ended December 11, 1926, and December 10, 1927

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 11, 1926, and December 10, 1927

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Dec 11, 1923	Week ended Dec. 10, 1927	Week ended Dec. 11, 1926	Week ended Dec 10, 1927	Week ended Dec 11, 1926	Week ended Dec 10, 1927	Week ended Dec 11, 1926	Week ended Dec. 10, 1927
New England States:								
Maine	2	4	1	113	71	54	0	0
Vermont	2				93		0	
Massachusetts	104	131	9	1	56	540	1	0
Rhode Island	12	25			1	10	0	0
Connecticut	37	37	5	9	39	47	0	0
Middle Atlantic States:								
New York	295	376	[1] 77	[1] 25	835	289	5	4
New Jersey	123	184	18	8	32	89	0	1
Pennsylvania	235	299			580	670	1	4
East North Central States:								
Ohio		98		10		59		2
Indiana	99	62	37	29	56	50	0	0
Illinois	112	177	24	39	742	32	3	5
Michigan	160	112		4	104	328	0	4
Wisconsin	47	55	51	29	523	84	2	5
West North Central States:								
Minnesota	55	28	1	1	113	5	0	4
Iowa [3]	42	14			17	12	0	1
Missouri	80	73	23	6	140	25	2	1
North Dakota	5				181		0	
South Dakota	3	2	2	2	36	21	0	1
Nebraska	7	21		11	10	10	1	0
Kansas	41	36	14	5	58	103	1	1
South Atlantic States:								
Delaware	3	3		1	2		0	0
Maryland [2]	58	41	27	28	32	88	1	1
District of Columbia	23						0	
West Virginia	49	28	51	26	65	30	0	1
North Carolina	102	80			16	1,158	0	2
South Carolina	30	35	409	629	9	335	0	0
Georgia	92	22	90	68	31	28	1	0
Florida	44	20	20	5	16	3	0	1
East South Central States:								
Tennessee	39	22	53	79	13	174	3	1
Alabama	72	78	44	67	14	44	1	1
Mississippi	25	39	106				1	
West South Central States:								
Arkansas	6	20	104	73	16	22	0	0
Louisiana	34	35	13	13	31	26	0	0
Oklahoma [3]	33	100	100	80	23	62	0	2
Texas	82	144	160	67	4	34	1	0

[1] New York City only. [2] Week ended Friday. [3] Exclusive of Tulsa.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 11, 1926, and December 10, 1927—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Dec. 11, 1926	Week ended Dec. 10, 1927	Week ended Dec. 11, 1926	Week ended Dec. 10, 1927	Week ended Dec. 11, 1926	Week ended Dec. 10, 1927	Week ended Dec. 11, 1926	Week ended Dec. 10, 1927
Mountain States:								
Montana	2	2			140	1	2	2
Idaho	2	0			33		0	3
Wyoming	0	1		1	27	10	3	0
Colorado	21	34	1		15	11	0	3
New Mexico	4	6			9	13	0	0
Arizona	8	7			4	9	0	0
Utah [2]	12	11		2	464		0	1
Pacific States:								
Washington	55	25	1		110	166	2	3
Oregon	20	10	15	14	31	8	0	0
California	154	120	33	21	999	53	1	4

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Dec. 11, 1926	Week ended Dec. 10, 1927	Week ended Dec. 11, 1926	Week ended Dec. 10, 1927	Week ended Dec. 11, 1926	Week ended Dec. 10, 1927	Week ended Dec. 11, 1926	Week ended Dec. 10, 1927
New England States:								
Maine	0	2	40	67	0	0	5	4
Vermont	0		3		0		0	
Massachusetts	2	24	324	266	0	0	6	6
Rhode Island	1	0	9	35	0	0	0	0
Connecticut	0	2	52	70	0	0	2	3
Middle Atlantic States:								
New York	5	6	387	382	18	1	50	27
New Jersey	2	1	143	127	0	3	18	6
Pennsylvania	1	8	417	366	0	0	59	24
East North Central States:								
Ohio		11		216		24		16
Indiana	0	4	176	114	147	94	10	3
Illinois	2	7	285	277	9	20	22	18
Michigan	0	6	308	210	14	29	3	9
Wisconsin	0	0	141	140	2	77	2	4
West North Central States:								
Minnesota	1	2	251	123	5	0	3	6
Iowa [2]	0	2	45	67	8	41	2	3
Missouri	0	0	107	86	3	26	10	11
North Dakota	0		35		28		0	
South Dakota	0	1	80	31	0	21	4	3
Nebraska	0	5	31	65	10	56	5	1
Kansas	0	1	92	134	18	40	3	8
South Atlantic States:								
Delaware	1	0	27	7	0	0	0	1
Maryland [2]	0	0	53	29	0	0	10	15
District of Columbia	0		8		0		1	
West Virginia	0	8	65	60	11	16	32	23
North Carolina	0	2	59	73	37	42	9	3
South Carolina	1	1	14	20	1	4	16	27
Georgia	0	2	37	13	65	0	13	4
Florida	3	2	15	10	24	0	18	4
East South Central States:								
Tennessee	1	2	55	36	7	6	37	28
Alabama	0	1	30	23	77	1	11	8
Mississippi	1	0	30	17	9	0	18	2
West South Central States:								
Arkansas	0	1	5	9	7	8	6	3
Louisiana	0	0	24	11	5	6	10	6
Oklahoma [3]	1	2	31	37	11	54	26	32
Texas	1	7	60	78	12	27	19	12
Mountain States:								
Montana	0	0	59	12	0	16	1	0
Idaho	0	1	28	8	5	0	0	0
Wyoming	0	0	21	14	0	10	1	1
Colorado	0	4	84	112	6	10	2	3
New Mexico	1	1	29	13	0	0	6	9
Arizona	0	0	20	6	0	0	0	6
Utah [2]	0	2	15	20	1	54	0	0
Pacific States:								
Washington	0	5	107	42	66	30	6	6
Oregon	1	13	86	22	41	51	5	4
California	6	27	231	162	12	2	10	9

[2] Week ended Friday. [3] Exclusive of Tulsa.

Report for Week Ended November 26, 1927

NORTH DAKOTA

	Cases		Cases
Diphtheria	5	Scarlet fever	76
Influenza	1	Smallpox	14
Measles	7	Typhoid fever	5

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week.

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
September, 1927										
Delaware	0	7	1		4		0	8	0	9
October, 1927										
California	21	499	70	3	199	11	153	485	22	49
November, 1927										
Alabama	3	434	226	169	75	23	1	138	28	100
Connecticut	0	136	25		105		16	223	0	18
Nebraska	1	73	5		36		27	148	33	15

September, 1927

	Cases
Delaware:	
Anthrax	1
Mumps	2
Tetanus	1
Whooping cough	10

October, 1927

California:	
Chicken pox	639
Dysentery (amœbic)	5
Dysentery (bacillary)	18
German measles	132
Jaundice	4
Leprosy	1
Lethargic encephalitis	7
Malta fever	1
Mumps	249
Ophthalmia neonatorum	1
Paratyphoid fever	4
Rabies in animals	13
Tetanus	2
Trachoma	21
Whooping cough	396

November, 1927

	Cases
Chicken pox:	
Alabama	81
Connecticut	525
Nebraska	186
Dengue:	
Alabama	4
German measles.	
Connecticut	5
Nebraska	8
Lead poisoning:	
Connecticut	1
Lethargic encephalitis.	
Alabama	1
Connecticut	2
Mumps:	
Alabama	33
Connecticut	193
Nebraska	72
Paratyphoid fever:	
Connecticut	6
Rabies in animals:	
Connecticut	5
Rabies in man:	
Alabama	1
Septic sore throat:	
Connecticut	10
Nebraska	3
Tetanus:	
Connecticut	2
Trichinosis.	
Connecticut	3
Typhus fever:	
Alabama	8
Whooping cough:	
Alabama	77
Connecticut	332
Nebraska	59

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 99 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,920,000. The estimated population of the 92 cities reporting deaths is more than 29,490,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended November 26, 1927, and November 27, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
41 States	2,382	2,397	
99 cities	1,207	1,235	1,327
Measles:			
40 States	2,809	4,396	
99 cities	801	780	
Poliomyelitis:			
41 States	166	31	
Scarlet fever.			
41 States	2,853	3,499	
99 cities	939	1,244	1,011
Smallpox:			
41 States	602	474	
99 cities	129	32	45
Typhoid fever:			
41 States	417	479	
99 cities	59	69	66
Deaths reported			
Influenza and pneumonia:			
92 cities	612	752	
Smallpox			
92 cities	0	1	
Indianapolis	0	1	

City reports for week ended November 26, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during non-epidemic years

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	9	2	2	0	0	10	0	1
New Hampshire:									
Concord	22,546	0	1	0	0	0	4	0	0
Vermont:									
Barre	10,008	0	1	0	0	0	0	0	0
Burlington	24,089	5	1	0	0	0	0	0	0

City reports for week ended November 26, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND—con.									
Massachusetts:									
Boston	779, 620	54	52	17	7	1	160	5	8
Fall River	128, 993	1	5	6	0	0	1	0	1
Springfield	142, 065	2	4	3	0	0	3	6	2
Worcester	190, 757	8	5	15	0	0	1	18	2
Rhode Island:									
Pawtucket	69, 760	0	1	2	0	0	0	0	0
Providence	267, 918	0	10	10	1	0	4	2	8
Connecticut:									
Bridgeport	(1)	2	10	7	2	0	0	0	3
Hartford	160, 197	1	9	8	2	0	0	1	2
New Haven	178, 927	9	4	3	0	0	32	15	4
MIDDLE ATLANTIC									
New York:									
Buffalo	538, 016	45	22	22	-------	0	27	28	14
New York	5, 873, 356	86	179	240	12	12	22	16	109
Rochester	316, 786	8	9	4	-------	0	3	1	3
Syracuse	182, 003	28	11	3	-------	0	9	14	3
New Jersey:									
Camden	128, 642	2	7	3	0	0	0	1	3
Newark	452, 513	30	12	34	6	0	21	7	9
Trenton	132, 020	1	6	0	0	1	0	0	3
Pennsylvania.									
Philadelphia	1, 979, 364	100	84	40	-------	6	3	55	31
Pittsburgh	631, 563	30	31	82	-------	1	175	51	21
Reading	112, 707	6	4	3	-------	0	1	0	2
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409, 333	24	20	18	0	1	11	2	10
Cleveland	936, 485	51	57	80	0	0	12	71	17
Columbus	279, 836	14	13	20	0	0	1	1	5
Toledo	287, 380	46	17	7	1	1	17	8	4
Indiana:									
Fort Wayne	97, 846	1	5	6	0	0	0	0	3
Indianapolis	358, 819	35	13	13	0	1	2	32	9
South Bend	80, 091	2	3	0	0	0	0	0	1
Terre Haute	71, 071	0	2	0	0	0	0	0	3
Illinois:									
Chicago	2, 995, 239	143	126	112	10	3	5	24	41
Springfield	63, 923	0	3	1	0	0	0	4	2
Michigan:									
Detroit	1, 245, 824	47	82	47	0	2	43	31	29
Flint	130, 316	12	14	8	0	0	1	36	3
Grand Rapids	153, 698	5	6	1	0	1	13	1	0
Wisconsin.									
Kenosha	50, 891	10	3	6	0	0	0	1	0
Milwaukee	509, 192	87	33	17	0	0	1	24	8
Racine	67, 707	7	3	0	0	0	1	1	0
Superior	39, 671	8	2	0	0	0	0	0	2
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110, 502	6	2	0	0	0	2	1	2
Minneapolis	425, 435	67	35	13	0	0	1	3	8
St. Paul	246, 001	12	21	3	0	0	1	2	8
Iowa:									
Davenport	52, 469	0	2	1	0	-------	0	0	-------
Des Moines	141, 441	0	7	0	0	-------	0	0	-------
Sioux City	76, 411	4	3	0	0	-------	0	6	-------
Waterloo	36, 771	2	0	0	0	-------	0	0	-------
Missouri:									
Kansas City	367, 481	31	13	8	0	3	0	35	11
St. Joseph	78, 342	0	4	0	0	0	0	0	2
St. Louis	821, 543	18	53	63	0	0	5	8	-------
North Dakota:									
Fargo	26, 403	26	0	0	0	0	1	1	0
Grand Forks	14, 811	16	0	0	0	-------	0	0	-------

[1] No estimate made.

City reports for week ended November 26, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
WEST NORTH CENTRAL—continued									
South Dakota:									
Aberdeen	15,036	1	0	0	0	-------	2	0	-------
Sioux Falls	30,127	2	1	0	0	-------	0	0	-------
Nebraska:									
Lincoln	60,941	17	2	1	0	0	2	9	0
Omaha	211,768	11	8	2	0	0	1	1	3
Kansas:									
Topeka	55,411	21	3	1	1	0	1	1	2
Wichita	88,367	12	8	0	0	0	0	0	6
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	0	3	2	0	0	0	1	1
Maryland:									
Baltimore	796,296	67	38	30	11	2	29	4	25
Cumberland	33,741	1	1	0	0	0	0	0	1
Frederick	12,035	-------	0	-------	-------	-------	-------	-------	-------
District of Columbia:									
Washington	497,906	23	24	21	1	1	0	0	12
Virginia:									
Lynchburg	30,395	2	2	10	0	0	0	0	3
Norfolk	(1)	19	5	3	0	0	0	1	3
Richmond	186,403	3	19	17	0	0	7	0	3
Roanoke	58,208	0	5	3	0	1	0	0	1
West Virginia									
Charleston	49,019	2	4	0	0	1	0	0	2
Wheeling	56,208	22	4	0	0	0	0	0	4
North Carolina:									
Raleigh	30,371	16	3	1	0	0	1	0	1
Wilmington	37,061	1	0	1	0	1	34	0	0
Winston-Salem	69,031	0	3	5	0	0	4	7	3
South Carolina:									
Charleston	73,125	0	2	0	25	0	0	0	6
Columbia	41,225	5	1	0	0	-------	3	18	-------
Greenville	27,311	-------	1	-------	-------	-------	-------	-------	-------
Georgia:									
Atlanta	(1)	3	7	5	42	0	0	0	10
Brunswick	16,809	0	0	0	0	0	0	5	1
Savannah	93,134	0	3	2	27	0	21	0	2
Florida:									
Miami	69,754	2	-------	3	0	0	0	2	1
St. Petersburg	26,847	-------	1	-------	-------	0	-------	-------	0
Tampa	94,743	0	2	6	1	1	1	0	2
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	2	3	0	0	0	0	0	2
Lexington	46,895	2	-------	1	0	0	0	0	2
Louisville	305,935	2	10	3	4	1	5	1	3
Tennessee:									
Memphis	174,533	3	11	8	0	0	25	2	7
Nashville	136,220	3	6	2	0	1	0	1	2
Alabama:									
Birmingham	205,670	4	8	8	2	4	1	0	11
Mobile	65,955	0	2	1	1	3	0	0	0
Montgomery	46,481	0	2	2	0	0	1	1	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	0	2	4	0	-------	0	0	-------
Little Rock	74,216	0	3	1	0	0	3	0	0
Louisiana:									
New Orleans	414,493	0	13	10	9	6	2	0	9
Shreveport	57,857	2	2	2	0	0	12	0	1
Oklahoma:									
Oklahoma City	(1)	3	4	11	3	1	0	1	7
Tulsa	124,478	4	-------	9	0	-------	0	9	-------

[1] No estimate made.

City reports for week ended November 26, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
WEST SOUTH CENTRAL—continued									
Texas:									
Dallas	194,450	4	15	32	2	2	2	0	5
Galveston	48,375	0	1	3	0	0	0	0	1
Houston	164,954	1	6	17	0	0	0	0	3
San Antonio	198,069	1	4	4	0	0	2	0	7
MOUNTAIN									
Montana:									
Billings	17,971	2	0	0	0	0	0	0	0
Great Falls	29,883	1	1	0	0	0	0	0	0
Helena	12,037	0	0	0	0	0	0	0	0
Missoula	12,668	3	0	0	0	0	0	0	0
Idaho:									
Boise	23,042	1	0	0	0	0	0	4	0
Colorado:									
Denver	280,911	43	16	6	-------	2	2	12	8
Pueblo	43,787	8	4	2	0	0	0	0	2
New Mexico:									
Albuquerque	21,000	3	1	1	0	0	0	0	0
Utah:									
Salt Lake City	130,948	11	5	11	0	0	1	1	1
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	(1)	21	7	6	0	-------	49	10	-------
Spokane	108,897	24	4	0	0	-------	0	0	-------
Tacoma	104,455	5	4	4	0	0	0	0	6
Oregon:									
Portland	282,383	14	10	5	0	0	0	1	5
California:									
Los Angeles	(1)	23	48	29	7	-------	4	14	-------
Sacramento	72,260	2	3	5	0	0	5	0	2
San Francisco	557,530	74	17	18	3	2	9	13	3

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	2	2	0	0	0	0	1	0	0	0	14
New Hampshire:											
Concord	0	1	0	0	0	0	0	0	0	0	13
Vermont:											
Barre	0	0	0	0	0	0	0	0	0	0	1
Burlington	1	0	0	0	0	0	0	0	0	0	4
Massachusetts:											
Boston	46	36	0	0	0	8	1	1	0	33	199
Fall River	2	4	0	0	0	2	0	1	0	0	22
Springfield	6	5	0	0	0	0	0	0	0	4	26
Worcester	11	8	0	0	0	4	0	0	0	0	50
Rhode Island.											
Pawtucket	1	2	0	0	0	0	0	0	0	0	12
Providence	7	13	0	0	0	2	1	2	0	0	66
Connecticut:											
Bridgeport	8	4	0	0	0	3	0	0	0	0	35
Hartford	5	3	0	0	0	0	0	0	0	9	37
New Haven	6	0	0	0	0	1	0	2	0	5	50

1 No estimate made.

City reports for week ended November 26, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
MIDDLE ATLANTIC											
New York:											
Buffalo	18	20	0	0	0	6	1	1	0	18	117
New York	122	87	0	0	0	73	18	15	0	135	1,271
Rochester	8	9	0	0	0	1	1	0	0	2	62
Syracuse	12	3	0	0	0	1	0	0	0	9	40
New Jersey:											
Camden	5	6	0	0	0	1	0	1	1	0	30
Newark	16	6	0	0	0	8	1	0	0	44	89
Trenton	2	2	0	0	0	1	0	0	0	0	38
Pennsylvania:											
Philadelphia	67	85	0	0	0	19	5	4	3	26	410
Pittsburgh	35	26	1	0	0	5	0	0	0	7	189
Reading	2	3	0	0	0	2	0	0	0	0	25
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	15	4	0	0	0	15	1	0	0	0	137
Cleveland	29	21	0	0	0	17	2	1	1	21	193
Columbus	10	18	0	0	0	0	0	0	0	6	66
Toledo	13	10	0	1	0	3	1	7	0	0	71
Indiana:											
Fort Wayne	2	7	0	0	0	4	0	0	0	4	26
Indianapolis	12	18	3	0	0	2	0	0	0	0	97
South Bend	4	2	1	0	0	2	0	0	0	0	18
Terre Haute	4	0	1	0	0	0	0	0	0	0	21
Illinois:											
Chicago	105	89	1	2	0	37	4	5	0	59	617
Springfield	2	2	0	0	0	1	0	0	0	0	20
Michigan:											
Detroit	77	63	1	0	0	20	2	3	2	56	253
Flint	9	25	0	0	0	0	0	0	1	2	22
Grand Rapids	10	4	0	0	0	2	0	0	0	0	28
Wisconsin:											
Kenosha	2	2	1	0	0	0	0	0	0	0	2
Milwaukee	18	24	1	0	0	0	0	0	0	13	105
Racine	4	8	0	0	0	0	0	0	0	9	6
Superior	2	6	0	0	0	0	0	0	0	0	9
WEST NORTH CENTRAL											
Minnesota:											
Duluth	8	7	1	0	0	2	0	0	0	2	24
Minneapolis	45	18	3	0	0	3	0	0	0	0	90
St. Paul	21	11	2	1	0	1	1	1	0	0	49
Iowa:											
Davenport	1	0	1	0	--------	--------	0	0	--------	0	--------
Des Moines	8	11	0	18	--------	--------	0	0	--------	0	38
Sioux City	3	2	1	0	--------	--------	0	0	--------	2	--------
Waterloo	2	2	0	0	--------	--------	0	0	--------	0	--------
Missouri:											
Kansas City	12	12	0	2	0	5	1	1	0	4	107
St. Joseph	3	2	0	84	0	2	0	0	0	0	29
St. Louis	35	23	0	0	0	12	3	3	0	8	207
North Dakota:											
Fargo	2	5	0	0	0	0	0	0	0	3	7
Grand Forks	0	0	0	1	--------	--------	0	0	--------	0	--------
South Dakota:											
Aberdeen	2	0	0	0	--------	--------	0	0	--------	0	--------
Sioux Falls	2	5	0	0	--------	--------	0	0	--------	0	6
Nebraska:											
Lincoln	2	2	0	0	0	0	0	0	0	9	14
Omaha	5	7	2	1	0	1	0	0	0	0	39
Kansas:											
Topeka	2	1	0	0	0	0	0	1	0	22	16
Wichita	4	13	0	14	0	0	1	1	0	3	35

City reports for week ended November 26, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
SOUTH ATLANTIC											
Delaware:											
Wilmington	5	1	0	0	0	1	0	0	0	1	31
Maryland:											
Baltimore	19	23	0	0	0	9	3	1	0	11	231
Cumberland	0	3	0	0	0	0	0	0	0	0	7
Frederick	0	------	0	------	------	------	0	------	------	------	------
District of Columbia:											
Washington	18	18	0	0	0	7	2	0	0	8	122
Virginia:											
Lynchburg	1	4	0	0	0	0	0	0	0	0	10
Norfolk	2	4	0	0	0	2	0	0	0	0	------
Richmond	8	6	0	0	0	6	0	1	0	0	52
Roanoke	3	10	0	0	0	0	0	0	0	0	18
West Virginia:											
Charleston	2	2	0	0	0	0	0	0	1	0	16
Wheeling	2	1	0	0	0	0	1	0	0	0	15
North Carolina:											
Raleigh	2	1	0	0	0	0	0	0	0	0	16
Wilmington	1	2	0	0	0	0	0	0	0	1	6
Winston-Salem	2	2	0	0	0	1	0	0	0	1	19
South Carolina:											
Charleston	0	2	0	0	0	2	1	1	1	0	27
Columbia	0	1	0	0	------	------	0	0	------	2	13
Greenville	1	------	0	------	------	------	0	------	------	------	------
Georgia:											
Atlanta	5	8	1	0	0	4	1	2	0	2	75
Brunswick	0	0	0	0	0	0	0	0	0	0	6
Savannah	1	2	0	1	0	4	1	0	0	0	30
Florida:											
Miami	------	4	------	0	0	0	------	0	0	0	21
St. Petersburg	0	------	0	------	0	0	0	------	0	------	6
Tampa	0	1	0	0	0	0	0	0	0	0	16
EAST SOUTH CENTRAL											
Kentucky:											
Covington	2	1	0	0	0	1	0	0	0	0	16
Lexington	------	0	------	0	0	2	------	1	0	0	15
Louisville	5	5	1	0	0	6	1	1	1	0	81
Tennessee:											
Memphis	6	6	1	0	0	3	2	0	0	1	66
Nashville	3	1	0	0	0	2	1	1	0	0	40
Alabama:											
Birmingham	4	2	0	0	0	2	1	1	0	0	65
Mobile	0	2	0	0	0	1	0	0	0	0	25
Montgomery	1	0	0	0	0	0	0	0	0	0	------
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	2	0	0	0	------	------	0	1	------	0	------
Little Rock	2	2	1	0	0	2	0	0	0	0	------
Louisiana:											
New Orleans	7	9	1	0	0	12	1	1	1	3	148
Shreveport	1	3	1	0	0	1	1	0	0	0	14
Oklahoma:											
Oklahoma City	3	3	0	15	0	2	0	0	0	0	25
Tulsa	------	2	------	1	------	------	------	0	------	4	------
Texas:											
Dallas	5	16	0	0	0	2	1	1	0	6	40
Galveston	1	0	0	0	0	0	0	0	0	0	9
Houston	1	2	0	0	0	2	0	0	0	0	45
San Antonio	1	8	0	1	0	8	0	0	1	0	52

City reports for week ended November 26, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
MOUNTAIN											
Montana:											
Billings	0	1	0	0	0	0	1	0	0	0	7
Great Falls	1	1	1	1	0	0	0	0	0	0	5
Helena	0	2	0	2	0	0	0	0	0	0	3
Missoula	1	0	1	0	0	0	0	0	0	0	3
Idaho:											
Boise	0	1	0	0	0	0	0	0	0	0	5
Colorado:											
Denver	11	11	2	0	0	6	0	1	0	8	74
Pueblo	1	1	0	0	0	1	0	0	0	0	10
New Mexico:											
Albuquerque	1	0	0	0	0	5	0	0	0	0	12
Utah:											
Salt Lake City	2	3	0	3	0	1	0	2	0	7	24
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	3
PACIFIC											
Washington:											
Seattle	9	6	3	0			1	1		2	
Spokane	8	12	5	17			0	0		0	
Tacoma	2	2	4	0	0	0	0	0	0	0	27
Oregon:											
Portland	8	3	4	5	0	0	0	0	0	1	67
California:											
Los Angeles	23	15	4	0			2	1		10	
Sacramento	2	5	0	0	0	3	0	0	0	0	26
San Francisco	11	10	0	0	0	15	1	0	0	8	129

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Maine:									
Portland	0	2	0	0	0	0	0	0	0
Massachusetts:									
Boston	0	1	3	0	0	0	1	10	2
Fall River	0	0	0	0	0	0	0	1	0
Worcester	0	0	0	0	0	0	0	2	0
MIDDLE ATLANTIC									
New York:									
New York	3	2	7	1	0	0	3	3	0
New Jersey:									
Newark	1	0	0	0	0	0	0	0	0
Pennsylvania:									
Philadelphia	1	0	0	0	0	0	0	0	1
Pittsburgh	0	0	0	0	0	0	0	2	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	0	0	0	1	0	0	0	2	0
Cleveland	0	0	3	0	0	0	1	0	0
Columbus	0	0	0	0	0	0	0	1	0
Toledo	1	0	0	0	0	0	0	0	0
Indiana:									
Fort Wayne	0	0	0	0	0	0	0	0	1
Illinois:									
Chicago	2	0	0	0	1	1	1	0	0
Michigan:									
Detroit	0	0	1	0	0	0	1	1	0
Wisconsin:									
Milwaukee	5	1	0	0	0	0	0	2	0

City reports for week ended November 26, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	0	1	0	0	0	0	0	0	0
Iowa:									
Des Moines	0		0		0		0	1	
Missouri:									
Kansas City	0	0	1	1	0	0	0	0	0
St. Louis	1	1	0	0	0	0	0	0	0
Kansas:									
Topeka	0	0	0	0	0	1	0	1	1
SOUTH ATLANTIC									
Delaware:									
Wilmington	1	1	0	0	0	0	0	1	1
Maryland:									
Baltimore	0	0	2	1	0	0	1	0	1
Virginia:									
Lynchburg	0	0	0	0	0	1	0	0	0
Norfolk	0	0	1	0	0	0	0	0	0
Richmond	0	0	0	0	0	1	0	0	0
West Virginia:									
Wheeling	0	0	0	0	0	0	0	1	0
North Carolina:									
Raleigh	0	0	0	0	0	2	0	0	0
Winston-Salem	0	1	0	0	1	1	0	0	0
South Carolina:									
Charleston [1]	0	0	0	0	1	0	0	0	0
Columbia	0	0	0	0	0	1	0	0	0
Georgia: [2]									
Atlanta [2]	0	0	0	0	1	0	0	0	0
EAST SOUTH CENTRAL									
Tennessee:									
Memphis	0	0	0	1	0	0	0	0	0
Alabama:									
Birmingham	0	0	0	0	1	0	0	0	0
Mobile [2]	0	0	0	1	0	1	0	0	0
Montgomery	0	0	0	0	1	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	3	0	0	0
Louisiana:									
New Orleans	1	0	0	0	2	3	1	0	0
Oklahoma:									
Oklahoma City	0	0	0	1	0	0	0	0	0
Texas:									
Dallas	0	0	0	0	3	2	0	0	0
MOUNTAIN									
Montana:									
Helena	0	0	0	0	0	0	0	1	0
Missoula	0	0	0	0	0	0	0	1	0
Colorado:									
Denver	1	0	0	0	0	0	0	0	0
Utah:									
Salt Lake City	0	0	0	0	0	0	0	2	0
PACIFIC									
Washington:									
Seattle	0		0		0		0	1	
Spokane	1		0		0		0	2	
Tacoma	0	0	0	0	0	0	0	3	0
Oregon:									
Portland	0	0	0	0	0	0	0	5	1
California:									
Los Angeles	0		1		2		1	5	
San Francisco	0	0	0	0	1	1	0	2	0

[1] Dengue: 1 case at Charleston, S. C.
[2] Typhus fever: 1 case at Atlanta, Ga., 2 cases at Savannah, Ga., and 1 case at Mobile, Ala.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended November 26, 1927, compared with those for a like period ended November 27, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, October 23 to November 26, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927	Nov. 27, 1926	Nov. 26, 1927
101 cities	213	195	224	214	228	[2] 215	230	[3] 228	212	[4] 204
New England	106	135	118	114	184	160	139	163	132	169
Middle Atlantic	138	191	143	226	163	205	159	234	155	213
East North Central	241	232	275	261	264	254	292	[3] 249	258	220
West North Central	264	139	252	195	222	161	214	153	192	179
South Atlantic	354	192	317	185	387	190	276	217	281	[4] 195
East South Central	383	260	424	153	264	209	367	239	217	122
West South Central	331	298	253	323	378	298	326	348	301	306
Mountain	155	99	219	99	182	279	146	207	201	171
Pacific	204	152	287	141	230	[2] 224	324	223	303	162

MEASLES CASE RATES

	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927	Nov. 27, 1926	Nov. 26, 1927
101 cities	64	70	81	77	106	[2] 96	135	[3] 125	134	[4] 135
New England	24	190	66	241	31	341	47	390	57	499
Middle Atlantic	13	72	16	72	44	124	28	93	30	129
East North Central	77	18	80	29	101	27	120	[3] 55	135	60
West North Central	85	34	151	14	147	16	198	22	109	24
South Atlantic	9	107	20	132	24	136	54	283	22	[4] 184
East South Central	21	204	26	234	10	76	31	148	16	163
West South Central	0	21	9	21	26	13	26	71	103	88
Mountain	392	63	793	9	1,531	18	1,950	72	2,543	27
Pacific	340	92	313	79	279	[2] 76	488	212	338	175

SCARLET FEVER CASE RATES

	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927	Nov. 27, 1926	Nov. 26, 1927
101 cities	169	146	188	149	206	[2] 150	212	[3] 177	213	[4] 158
New England	245	211	264	200	351	204	330	248	285	181
Middle Atlantic	92	97	94	110	125	110	130	152	138	122
East North Central	157	166	186	173	182	177	201	[3] 202	196	196
West North Central	355	248	415	165	347	185	407	232	411	204
South Atlantic	132	168	197	159	177	183	143	156	166	[4] 167
East South Central	331	138	248	168	295	153	228	112	238	87
West South Central	112	126	112	151	142	105	116	105	198	168
Mountain	365	144	583	180	702	153	638	234	784	180
Pacific	236	97	204	141	279	[2] 117	335	154	249	131

[1] The figures given in this table are rates per 100,000 population annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.
[2] Seattle, Wash., and Spokane, Wash., not included.
[3] Fort Wayne, Ind., not included.
[4] Frederick, Md., and Greenville, S. C., not included.

Summary of weekly reports from cities, October 23 to November 26, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

SMALLPOX CASE RATES

	Week ended—									
	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927	Nov. 27, 1926	Nov. 26, 1927
101 cities	3	7	3	18	5	[2] 16	5	[3] 19	5	[4] 22
New England	0	9	0	0	0	0	0	0	0	0
Middle Atlantic	0	0	0	0	0	0	0	0	0	0
East North Central	1	0	6	6	10	4	3	[3] 6	7	1
West North Central	2	52	2	159	10	157	4	161	30	202
South Atlantic	6	0	0	14	2	5	4	9	4	[4] 2
East South Central	5	5	10	0	10	0	0	5	5	0
West South Central	4	0	9	4	30	4	4	4	4	4
Mountain	9	45	0	36	9	27	0	27	0	54
Pacific	21	16	3	18	5	[2] 3	48	29	5	45

TYPHOID FEVER CASE RATES

	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927	Nov. 27, 1926	Nov. 26, 1927
101 cities	27	17	24	19	21	[2] 15	16	[3] 15	12	[4] 10
New England	12	19	17	16	9	16	7	23	7	14
Middle Atlantic	14	12	12	20	21	15	21	14	13	10
East North Central	17	13	13	7	10	9	5	[3] 7	3	6
West North Central	24	16	26	24	16	28	6	20	8	14
South Atlantic	75	22	45	31	35	20	22	25	19	[4] 9
East South Central	140	46	103	36	52	5	36	15	31	15
West South Central	39	38	21	59	31	34	13	29	17	13
Mountain	46	27	91	36	27	9	27	18	18	27
Pacific	19	16	46	5	29	[2] 7	20	13	21	5

INFLUENZA DEATH RATES

	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927	Nov. 27, 1926	Nov. 26, 1927
95 cities	11	8	11	9	14	8	10	[3] 9	10	[5] 11
New England	7	0	12	5	2	2	2	5	9	2
Middle Atlantic	8	4	9	8	10	9	10	7	7	10
East North Central	14	5	6	9	10	5	10	[3] 2	9	5
West North Central	2	6	6	10	13	2	6	10	2	6
South Atlantic	21	13	15	7	17	17	8	20	15	[4] 13
East South Central	10	41	21	15	26	15	31	20	41	46
West South Central	26	17	40	26	66	17	31	34	31	34
Mountain	9	27	18	18	27	18	9	36	36	18
Pacific	7	10	7	7	14	0	4	3	0	[6] 14

PNEUMONIA DEATH RATES

	Oct. 30, 1926	Oct. 29, 1927	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927	Nov. 27, 1926	Nov. 26, 1927
95 cities	96	91	101	90	106	104	123	[3] 112	126	[5] 98
New England	99	65	99	63	90	95	104	102	132	80
Middle Atlantic	101	92	114	87	115	113	136	119	138	98
East North Central	86	82	85	93	87	89	104	[3] 97	98	89
West North Central	63	69	84	62	76	75	120	81	74	87
South Atlantic	108	88	121	118	140	120	144	160	166	[4] 149
East South Central	134	112	98	112	165	138	171	148	103	127
West South Central	88	190	115	90	110	129	154	112	207	112
Mountain	182	144	164	117	155	144	109	99	146	99
Pacific	88	97	49	100	99	100	74	76	124	[6] 76

[3] Fort Wayne, Ind., not included.
[4] Frederick, Md., and Greenville, S. C., not included.
[5] Frederick, Md., Greenville, S. C., and Los Angeles, Calif., not included.
[6] Los Angeles, Calif., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,800	1,512,800

FOREIGN AND INSULAR

THE FAR EAST

Report for the week ended November 19, 1927.—The following report for the week ended November 19, 1927, was transmitted by the Eastern Bureau of the Health Section of the Secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Plague, cholera, or smallpox was reported present in the following ports:

PLAGUE

Egypt.—Alexandria
India.—Rangoon, Bassein.
Dutch East Indies. Makassar
Straits Settlements.—Singapore.
French Indo-China.—Saigon, Cholon.

CHOLERA

India.—Calcutta, Madras, Tuticorin.
Straits Settlements —Singapore
Dutch East Indies.—Batavia.
Siam.—Bangkok.

SMALLPOX

Aden Protectorate —Aden.
Iraq —Basra.
India.—Calcutta, Madras, Tuticorin, Rangoon.
Dutch East Indies —Banjermasin, Samarinda.
Siam —Bangkok.

Returns for the week ended November 19 were not received from Bombay, India; Canton, China; or Vladivostok, Union of Socialist Soviet Republics.

ARGENTINA

Plague—Quilino—Rosario.—Information dated November 26, 1927, shows the occurrence of plague at Quilino and Rosario, Argentina.

BELGIUM

Ghent—Vital statistics, year 1926.—The report of the Municipal Bureau of Health of Ghent for the year 1926 gives the population of the city as 162,641. There were 2,356 births during the year as compared with 2,471 in 1925, the rates being 14.41 per 1,000 population in 1926, and 15.08 per 1,000 in 1925. There were 2,078 deaths in 1926 as compared with 2,123 in 1925. Deaths among children under one year were 213 in 1926, as compared with 260 in 1925.

The principal causes of death in 1926 were cancer, 226 deaths, and pulmonary tuberculosis, 116. Forty-eight cases of typhoid fever were reported with 4 deaths; 51 cases of scarlet fever with no death; 44 cases of diphtheria with 2 deaths; and there were 6 deaths from whooping cough. One case of puerperal fever and one of cerebrospinal meningitis were reported, but there were no deaths from these

diseases. It is said that smallpox has not appeared in Ghent for a number of years. Forty-nine cases of gonorrhea and 2 of syphilis were discovered and segregated.

The city maintains an open-air school for tubercular children at Breedene-sur-Mer, which was attended by 64 children during the year.

CANADA

Communicable diseases—Week ended November 26, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases from seven Provinces of Canada for the week ended November 26, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Influenza	6							6
Lethargic encephalitis				1				1
Poliomyelitis				1		1	1	3
Smallpox				71	1	9	7	88
Typhoid fever	2	11	12	16	3		2	46

Communicable diseases—Ontario—November, 1927, comparative.—During the month of November, 1927, communicable diseases were reported in the Province of Ontario, Canada, as follows:

Disease	1927		1926	
	Cases	Deaths	Cases	Deaths
Cerebrospinal meningitis	1			2
Chancroid	7		1	
Chicken pox	1,080		1,527	
Diphtheria	343	17	393	14
Dysentery		4		
German measles	14		15	
Gonorrhea	190		157	
Influenza		3		7
Lethargic encephalitis	4	1	2	
Measles	542		746	
Mumps	1,007		47	
Pneumonia		74		127
Poliomyelitis	7		8	1
Scarlet fever	402	4	546	
Smallpox	271		95	1
Syphilis	115		99	
Tuberculosis	94	53	84	42
Whooping cough	285		312	2

Smallpox.—During the period under report smallpox was notified in the Province of Ontario in 21 municipalities, the greatest numbers of cases being notified as follows: Ottawa, 97 cases; Toronto, 59 cases; East York, 51 cases. Reports from other localities show as follows: North York, 11 cases; Gloucester, 9; Clarence, 9; Kitchener, 7; Charlton, 6. In eight localities one case each was reported.

Communicable diseases—Quebec—Week ended November 26, 1927.—The Bureau of Health of the Province of Quebec reports cases of

certain communicable diseases for the week ended November 26, 1927, as follows:

Disease	Cases	Disease	Cases
Chicken pox	32	Scarlet fever	120
Diphtheria	125	Smallpox	8
German measles	2	Tuberculosis	62
Influenza	9	Typhoid fever	13
Measles	87	Whooping cough	26

Vital statistics—Quebec—September, 1927.—Births and deaths in the Province of Quebec for the month of September, 1927, were reported as follows:

Estimated population	2, 604, 000
Births	6, 252
Birth rate per 1,000 population	28. 81
Deaths	2, 923
Death rate per 1,000 population	13. 47
Deaths under 1 year	1, 083
Infant mortality rate	173. 24
Deaths from—	
Accidents (all)	110
Cancer	145
Cerebrospinal meningitis	6
Diabetes	13
Diarrhea	402
Deaths from—Continued	
Diphtheria	28
Heart disease	209
Influenza	16
Measles	4
Pneumonia	123
Poliomyelitis	3
Scarlet fever	9
Syphilis	7
Tuberculosis (pulmonary)	135
Tuberculosis (other forms)	48
Typhoid fever	23
Whooping cough	39

Nova Scotia—Infant mortality and deaths from communicable diseases—January to June, 1927.—The report of vital statistics for the Province of Nova Scotia, Canada, for the first half of the year 1927, shows a decrease in the birth rate and an increase in infant mortality, as compared with the first half of the year 1926. The infant mortality rate for the six months was 93 per 1,000 births in 1927 and it was 76 per 1,000 last year.

The following table gives a comparison of the deaths from certain communicable diseases during the first six months of the years 1926 and 1927 in the Province of Nova Scotia:

Deaths during first six months of 1926 and 1927

Disease	1926	1927
Cancer	262	239
Cerebrospinal meningitis	11	1
Diphtheria	7	22
Measles	9	11
Scarlet fever	6	15
Tuberculosis (pulmonary)	297	296
Whooping cough	2	27

Poliomyelitis—Alberta Province—May–November, 1927.—From May 26 to November 21, 1927, 322 cases of poliomyelitis were reported in the Province of Alberta, with 37 deaths from this disease.

The first case was reported in Edmonton on May 26, but there were very few cases reported until August, and the epidemic was at its height in September. The city of Edmonton reported 100 cases, and 13 were reported in the city of Calgary. Ninety per cent of the cases occurred within a radius of 90 miles of the city of Edmonton; 86 per cent of the cases were children 15 years of age or under, but there were 5 deaths of adults over 30 years of age.

A hospital is now under construction in the city of Edmonton for the after-care of poliomyelitis cases.

EGYPT

Communicable diseases—Two weeks ended October 21, 1927.—During the two weeks ended October 21, 1927, communicable diseases were reported in Egypt as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Cerebrospinal meningitis	1		Typhoid fever	120	
Influenza	1,278		Typhus fever	6	2

GREAT BRITAIN (SCOTLAND)

Infectious disease prevalence—Glasgow—January–October, 1927.—Information relative to infectious disease prevalence in Glasgow during the periods June to October, and January to October, 1927, is as follows:

Chicken pox.—Incidence was stated to be fairly high. Cases, 458 during October, 1927. On account of possible confusion in diagnosis in districts where mild smallpox is present, specially notified cases of chicken pox have been investigated, particularly when occurring in unvaccinated children and adults.

Diphtheria.—Cases, 2,307, as compared with 1,948 cases during corresponding period of the year 1926, the increased incidence being most marked in September and October. The type of the disease was stated to be mild, but severe cases followed by paralysis occurred with some frequency.

Measles.—Stated to be decreasing in incidence. In September 227 cases were registered; in October, 1,208 cases. It was stated to be occurring freely in all the more populous districts of the city, in contrast with the character of the disease in the winter of 1925–26, when the infection spread slowly throughout the city.

Pneumonia.—The incidence of the disease was stated to have been rising since June, 1927, the maximum increase occurring in October, when 687 cases were registered, as compared with 413 cases in October of 1926. The type of the disease was stated to be severe, the lobar form being prevalent in persons over five years of age. From January to June, 1927, 4,603 cases were notified as compared with 4,559

cases for the same period in 1926, including the period of high prevalence of influenza and pneumonia in March of that year.

Scarlet fever.—The prevalence was stated to be less than in 1926, with 328 cases in September, as compared with 543 in September of the preceding year. In October there were 495 cases as against 758 cases for the preceding October.

Whooping cough.—This disease was made notifiable in July, 1924, for a period of three years. At the expiration of that period notification was not renewed.

HAWAII

Plague-infected rat—Pohakea—November 10, 1927.—The finding of a plague-infected rat at Pohakea, Hamakua district, Hawaii, was reported November 10, 1927.

ITALY

Infectious disease prevalence—Year 1926 and comparison with 1925.—Data supplied by the provincial health officers of the Kingdom of Italy to the department of health of the Kingdom for the year 1926 with comparisons of similar data for the year 1925, show as follows:

Disease	Year 1926, cases	Year 1925, cases	Remarks
Anthrax	1,753	2,383	
Cerebrospinal meningitis	532	581	
Chicken pox	9,399	9,045	Area of greatest prevalence, Province of Lazio, with 6.3 per 10,000 population. Lowest prevalence, Province of Apulia, viz, 0.8.
Diphtheria and croup	14,923	16,383	Areas of greatest prevalence, Provinces of Lazio and Venezia Giulia, each 6.3, lowest, Apulia, 0.9. No notable outbreak
Dysentery (amebic)	522	644	Greatest prevalence, Sardinia.
Dysentery (bacillary)	1,742	2,046	Greatest prevalence, districts in Calabria, Sardinia, and Venetia Tridentina.
Influenza	184,499	64,736	
Kala azar (Leishmaniosis)	263	313	Of these, 223 in Sicily, 13 each in Calabria and Campania, 4 each in Venice and Puglia, 2 in Sardinia, and 1 each in Liguria, Piedmont, and Lombardy and the Marches. Larger but unreported number in 1925
Lethargic encephalitis	450	681	Greatest prevalence in northern and central Italy; rarely in the south and Sardinia.
Malaria	220,602	283,109	Great diminution noted, especially in Sardinia, Lazio, Campania, and Basilicata
Malta fever	1,085	439	Greatest diffusion in Tuscany, Sicily, and generally in the southern provinces
Measles	98,158	104,485	Epidemic outbreaks Sardinia in two localities; Lecce, two localities.
Pellagra	103	103	
Poliomyelitis (acute anterior).	388	780	Greatest diffusion in northern and central Italy; rare in the south, and in Sardinia and Sicily.
Puerperal fever	1,678	2,110	
Rabies	105	163	1926: Persons reported bitten by dogs, 8,622; 1925: 9,415.
Scarlet fever	16,062	16,733	Epidemic outbreaks in Catanzaro, Foggia, and Rome.
Smallpox and varioloid	112	195	Isolated cases of mild character difficult to diagnose.
Typhoid and paratyphoid fever.	35,649	24,264	Lazio, 30.0 per 10,000; Umbria, 19.7; Marches, 16.3; Lombardy, 16.0; Abruzzi, 15.9; Venetia Giulia, 12.6; Tuscany, 11.3; Emilia, 9.7; Liguria, 9.3; Campania, 8.3; Venice, 8.2; Calabria, 6.9; Venezia Tridentina, 6.8; Sardinia, 6.7; Piedmont, 6.4; Basilicata, 6.3; Apulia, 6.0; Sicily, 3.7.
Typhus fever	34	----------	Of these, 31 in city of Naples and occurring in first semester of year. Imported, result of contact and occurring in three zones of the city and among related persons.
Whooping cough	31,282	23,756	Greatest frequency in Sardinia, viz, 59.3 per 10,000 population; Lombardy, 7.4.

Population: 40,064,000.

LATVIA

Communicable diseases—September, 1927.—During the month of September, 1927, communicable diseases were reported in the Kingdom of Latvia as follows:

Disease	Cases	Disease	Cases
Diphtheria	28	Puerperal fever	1
Dysentery	8	Rabies	1
Erysipelas	11	Scabies	1
Influenza	28	Scarlet fever	142
Leprosy	1	Tetanus	3
Measles	38	Trachoma	1
Mumps	3	Typhoid fever	149
Poliomyelitis	1	Whooping cough	59

Population: 1,950,000.

SENEGAL

Plague—Yellow fever—October 24–November 13, 1927.—During the period October 24 to November 13, 1927, plague and yellow fever were reported in Senegal as follows:

Plague.—In the interior, in the Cayor region, 48 cases with 8 deaths; at the town of Thies, 1 case and 12 suspect cases.

Yellow fever.—At Dakar, cases, 9; deaths, 6. In the interior, cases, 31; deaths, 23. European fatal cases, 6.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended December 16, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
Siam				Oct. 16-22, 1927 Cases, 8, deaths, 7. Apr 1-Oct. 22, 1927. Cases, 769; deaths, 525.
Bangkok	Oct 16-22	1	1	District

PLAGUE

Place	Date	Cases	Deaths	Remarks
Algeria				
Oran	Oct. 30-Nov 5	1		
Argentina.				
Quilino	Nov. 26	1		
Rosario	do	1		
Hawaii				
Hamakua—Pohakea	Nov. 10			Infected rat found.
India				
Bombay	Oct. 16-22	2	1	
Madras Presidency	Oct 9-15	167	72	
Java:				
East Java and Madura	Sept 25-Oct. 1	3	3	
Senegal				
Cayor region	Oct 24-Nov. 13	48	8	Interior.
Thies	do	1		12 suspect cases.
Siam	Oct 16 22	1		Apr. 1-Oct. 22, 1927: Cases, 12; deaths, 8.
Bangkok	do	1		

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended December 16, 1927—Continued

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria:				
Oran	Oct. 30-Nov. 12	14		
Brazil:				
Rio de Janeiro	Oct. 23-29	1	1	
Canada:				
Alberta	Nov. 20-26	7		
Manitoba	do	1		
Ontario	do	71		Nov. 1-30, 1927: Cases, 271; corresponding period, year 1926—cases, 95; deaths, 1.
Ottawa	do	10		
Quebec	do	8		
Saskatchewan	do	9		
China:				
Chefoo	Oct 22-29			Present.
Tientsin	Oct. 16-22	1		
Great Britain:				
England and Wales	Nov. 13-19			Cases, 226.
Bradford	Nov. 6-19	5		
Bristol	Nov. 13-19	3		
Leeds	do	2		
Newcastle on Tyne	do	1		
India:				
Bombay	Oct. 16-22	4	2	
Italy				Year 1926: Cases, 112; year 1925—cases, 195.
Java:				
East Java and Madura	Sept. 25-Oct. 1	1		
Siam				Apr. 1-Oct. 22, 1927: Cases, 253; deaths, 67.
Spain:				
Malaga	Nov. 11-18		1	

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Bulgaria:				
Sofia	Nov. 5-11	2		
Egypt				Oct. 8-21, 1927: Cases, 6; deaths, 2.
Greece:				
Athens	Sept. 1-30	2		
Italy				Year 1926. Cases, 34.
Naples	Year, 1926	31		Imported; contact cases.
Palestine	Oct. 11-31	6		
Union of South Africa:				
Cape Province	Oct. 16-22			Outbreaks in three districts, in 9 locations.
Natal	do			Outbreak in Durban district, at Bellair

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Senegal	Oct. 24-Nov. 13			Cases, 31; deaths, 23.
Urban—				
Dakar	Oct 24—Nov. 6	9	6	
Thies	Oct. 24-Nov. 13	4	4	European.
Interior—				
Kelle	Oct. 25-30	1	1	
Keur Samba Kane	Oct. 31-Nov. 6	1	1	
Keur Madiop	Oct. 24-30	1	1	Syrian.
Louga	Oct. 24-Nov. 13	4	4	3 cases Syrian.
Mekhe	do	5	3	
N'Dande	Oct. 24-Nov. 6	3	2	
Sebikotane	Oct. 31-Nov. 13	3	1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 9, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-Oct. 15	119	11	
Canton	May 1-Oct. 29	102	67	
Foochow	July 24-Oct. 22			Present.
Hong Kong	July 17-Sept 3	3	3	
Kulangsu	June 21	1		
Shanghai	June 19-25	2		
Do	July 31-Oct 22		119	In international settlement and French concession.
Swatow	May 15-Oct. 29	138	13	
Tientsin	Aug. 27-Oct. 1	14		
India	Apr. 17-Sept 24			Cases, 179,664; deaths, 97,933.
Bombay	May 8-Sept 17	127	57	
Calcutta	May 8-Oct. 22	828	490	
Karachi	May 29-June 4	1	1	
Madras	June 19-Oct. 22	833	442	
Rangoon	May 8-Oct 22	26	21	
India, French Settlements in	Mar 30-Aug. 27	253	168	
Indo-China (French)	Apr 1-Sept. 20			Cases, 15,564.
Annam	do	4,509		
Cambodia	do	403		
Cochin-China	do	1,606		
Saigon	June 4-Oct. 2	13	4	
Laos	July 11-Sept 20	223		
Tonkin	Apr 1-Sept 20	9,818		
Iraq:				
Amarah	Oct. 2-22	45	26	
Baghdad	July 24-Oct. 22	30	19	
Basra	July 17-Oct 22	385	289	
Diwaniyah	Oct. 2-22	72	43	
Hillah	do	13	7	
Kerbala	do	14	10	
Kut	do	12	8	
Muntafique	do	9	4	
Japan				
Yokohama	July 31-Aug. 6	1	1	
Java:				
Batavia	Reported Nov. 19	25	15	
Persia:				
Abadan	July 21-Aug 13	215	183	
Ahwaz	July 31-Aug 13	20	13	
Minab	Aug. 7-13		23	
Mohammerah	July 17-Aug 27	194	155	
Nasseri	July 19-31		10	
Philippine Islands:				
Bulacan Province	June 7-July 8	3	2	
Leyte Province—				
Barugo	June 29	1	1	
Carigara	June 23	1	1	Final diagnosis not received.
Palo	May 18	1		
Manila	July 17-Aug. 27	2		
Siam	May 1-Oct. 15			Cases, 374; deaths, 220.
Bangkok	do	53	18	
On vessel:				
S. S. Adrastus	Reported Aug. 6	1	1	At Yokohama, Japan.
S. S. Montreal Maru	Sept 20			At Muke, Japan.
S. S. Tabaristan	Oct. 6	1		Case in coolie removed at Basra.
S. S. Morea	Sept. 2			At Hong Kong; cholera-infected.
S. S. War Mehtar (oil tanker)	Aug 4	1	1	At Saffagha, Egypt.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	Aug 21-Oct. 20	3		
Oran	Aug. 21-Sept. 10	5	4	
Argentina	Jan. 1-Aug. 2			Cases, 80; deaths, 44.
Bahia	Nov. 21	1		In vicinity.

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 9, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Argentina—Continued.				
Province—				
Buenos Aires	Apr. 10-May 7	4	3	
Cordoba	Jan. 11-Aug. 6	52	29	
Do	Nov. 21	10		Reported as having occurred three weeks previously.
Corrientes	June 1	1	1	
Entre Rios	Mar. 29-Aug. 13	8	1	
Sante Fe	Apr. 28-May 16	4	3	
Territory—				
Chaco—				
Barranqueras	May 29	2	2	
Formosa	June 25	3	2	
Pampa	July 27-Aug. 2	4		
Rio Negro	Aug. 6	1		
City—				
Merou	Reported July 14			Present.
Rosario	May 7	1	1	
Santa Fe	May 16	4	2	
Azores:				
St. Michaels Island	May 15-Oct. 29	12	1	
Ribeira Grande	June 12-18	1		
Brazil:				
Sao Paulo	June 3-9	1	1	
British East Africa:				
Kenya	Apr. 24-July 31	73	14	
Mombasa	July 24-30	1	1	
Nairobi	May 22-28	6		
Tanganyika	Mar. 29-May 28		37	
Do	July 24-Oct. 1		70	
Uganda	Jan. 1-Feb. 28	138	121	
Do	Mar. 27-June 30	782	593	
Canary Islands:				
Laguna district—				
Tejina	June 17	1		
Las Palmas	Oct. 8-11	8		
Ceylon:				
Colombo	May 1-Oct. 22	24	14	Plague rats, 5.
China:				
Amoy	July 3-23			Present in surrounding country.
Mongolia	Reported Oct. 11		200	Approximate.
Tientsin	Aug. 14-20	2		
Tungliao	Reported Oct 11-15.	200		
Ecuador				
Guayaquil	June 1-Oct. 30	7		Rats taken, 95,408; found infected, 53.
Egypt:				
Alexandria	June 4-Sept. 2	4		
Beni-Souef	June 4-July 13	5	2	
Biba	June 4-10	1		At Nama.
Dakhalia	June 24-July 9	6	1	
Minia	Aug. 8-9	4		
Port Said	June 24-July 21	4	1	
Suez	Sept. 4	1		
Tanta district	June 4-10	1		
Greece	May 1-June 30	4	3	
Athens	June 1-Aug 29	3		Including Piraeus.
Mytilene	Aug. 9-Sept. 26	6		
Patras	May 30-Nov. 5	10	3	
Hawaii Territory:				
Hamakua	July 15-Aug. 30			2 plague rodents.
Honokaa	May 17-23	2	2	
Kapulena	Oct. 22			1 plague rodent.
Kukuihaele	Aug. 12-17	1	1	Do.
Paauilo	July 26-Aug. 1		4	
India	Apr. 17-Oct 24			Cases, 25,403, deaths, 11,164.
Bombay	May 8-Oct. 8	104	88	
Calcutta	Aug. 21-Sept. 3	18	10	
Madras	May 1-Oct. 8	1,691	792	
Rangoon	May 8-Oct. 22	81	75	
Indo-China (French)	Apr. 1-Aug. 10	50		
Saigon	Sept. 2-16	2		
Kwang-Chow-Wan	May 21-July 31	73		
Iraq:				
Baghdad	Apr. 8-May 28	12	1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 9, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Java:				
Batavia	May 1-Oct. 22	419	399	Province.
East Java and Madura	May 22-July 16	28	27	
Pasoeroean Residency	May 9			Outbreak reported at Nagdiwano
Surabaya	Apr. 17-Sept. 24	94	92	
Madagascar				Mar. 16-Apr. 30, 1927: Cases, 256; deaths, 135.
Province—				
Ambositra	Mar. 16-Aug 15	100	93	
Antisirabe	Mar 16-Sept. 15	44	44	
Miarinarivo (Itasy)	do	94	83	
Moramanga	May 16-Aug 31	32	31	
Tananarive	Mar. 16-Sept 15	350	308	
Tananarive Town	Mar 16 June 30	22	20	
Mauritius:				
Port Louis	May 1-June 30	1	1	
Nigeria	Mar. 1-May 31	228	117	
Peru	Apr.-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1 May 31	7	4	
Lima	Apr. 1-July 31	13	8	
Lima City	Apr 1-30	5	1	
Senegal	May 23-Oct. 16			Cases, 1,159; deaths, 646.
Baol	June 2-Oct. 16	235	109	
Cayor Frontier	July 4-Oct. 23	992	561	
Dakar	June 20-Oct. 2	147	94	
Facel	July 6	17	8	
Guindel	June 20-26	11	2	
Louga district	Sept 18-Oct. 16	13	4	
M'Bour	July 6-10	28	23	
Medina	June 13-19	2	2	
Pout	July 4 10	1		
Rufisque	May 23-Sept. 25	223	167	
Thies district	do	34	15	
Tivaouane	June 2-July 17	50	32	
Siam	Apr 1-June 25			Cases, 12; deaths, 8.
Do	Oct 2-15	1	1	
Bangkok	May 8-June 11	2	1	
Do	Oct. 2-8	1		
Syria:				
Beirut	June 11-Sept. 10	4		
Tunisia	Apr. 21-July 10	144		
Tunis	July 25-Aug. 1	1		
Turkey:				
Constantinople	May 13 19	1		
Do	Sept. 18-Oct. 1	2	1	
Union of South Africa:				
Cape Province -				
Maraisburg district	May 1-14	2	2	Native.
Orange Free State -				
Edenburg district	July 17-26	3	3	Natives; on farm.
Rouxville district	July 24-Aug 6	2	2	
On vessel.				
S. S. Averoff	June 24-30	1		Greek warship at port of Athens.
S. S. Capafric	Aug. 23	3	1	At Duala, French Cameroons, from Nigeria.
S. S. Elcano	Aug. 19	1		At Piraeus, Greece.
S. S. Madonna	Aug. 24	1		At Dakar, Senegal, from ports south.
S. S. Ransholm	Aug. 5	3		At Gefle, Sweden, from Rufisque, Senegal.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-Sept. 20			Cases, 955.
Algiers	May 11-June 30	8		
Oran	May 21-Oct. 29	74		
Angola	June 1-Aug. 31	47		
Loanda	Sept. 1-15	1		
Portuguese Congo	do	4		
Arabia:				
Aden	July 17-Aug. 1	2	1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 9, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Brazil:				
Bahia	Aug. 7-13	1		
Porto Alegre	July 1-Sept. 30	11		
Rio de Janeiro	May 22-Sept. 24	25	21	
British East Africa:				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 29-June 18		22	
Do	Aug. 7-Sept. 17		29	
Zanzibar	Apr. 1-Aug. 31	121	41	
British South Africa:				
Northern Rhodesia	Apr. 30-Oct. 15	331	16	
Canada	June 5-Nov. 19			Cases, 1,033.
Alberta	June 12-Nov. 19			Cases 243.
Edmonton	Oct. 23-29	1		
Calgary	June 12-Aug. 27	9		
British Columbia—				
Vancouver	May 23-Sept. 4	4		
Manitoba	June 5-Nov. 19			Cases, 64.
Winnipeg	June 12-Nov. 26	26		
Nova Scotia	Sept. 11-Oct. 15	2		
Halifax	Oct. 8-15	1		
Ontario	June 5-Nov. 19			Cases, 534.
Kingston	Nov. 13-19	1		
Ottawa	June 12-Nov. 19	239		
Sarnia	Aug. 7-13	1		
Toronto	June 19-Nov. 19	55		
Windsor	Oct. 2-15	9		
Quebec	June 19-Nov. 5	32		
Riviere du Loup	Oct. 29-Nov. 19	6		
Saskatchewan	June 12-Nov. 19			Cases, 184.
Moose Jaw	Aug. 14-Oct. 22	24		
Regina	July 17-Nov. 12	16		
Ceylon	May 1-7			Cases, 3, deaths, 2.
Colombo	July 31-Aug. 6	1	1	
China:				
Amoy	May 8-28	1		
Do	July 3-16			Present in surrounding country.
Antung	July 4-31	3		
Canton	Sept. 18-24	1	1	
Chefoo	May 8-14			Present.
Do	Oct. 9-15			Do.
Foochow	May 8-Oct 22			Do.
Hong Kong	May 8-Sept. 17	22	21	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-July 30	8		
Dairen	May 2-June 3	10	5	
Fushun	May 15-Sept. 17	11		
Harbin	June 13-July 10	4		
Kaiyuan	July 3-9	2		
Mukden	May 22-Oct 29	9		
Pensihu	July 3-Oct. 1	2		
Ssupingkai	May 8-July 9	2		
Tientsin	May 8-Oct. 1	30	4	
Chosen	Feb. 1-July 30			Cases, 526; deaths, 211.
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr. 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr. 1-30	1		
Curacao	May 29-June 4	1		Alastrim.
Ecuador:				
Guayaquil	June 1-Oct 31	5		
Egypt	May 7-Sept. 30			Cases, 21; deaths, 4.
Alexandria	May 21-June 17	4	1	
Cairo	Jan. 22-Apr. 15	14	3	
France	Apr. 1-Aug. 31			Cases, 207.
Lille	July 24-30	1		
Paris	May 21-July 31	14	2	
Gold Coast	Mar. 1-July 31	42	7	
Great Britain:				
England and Wales	May 22-Nov. 12			Cases, 4,476.
Birmingham	Aug. 14-Sept. 30	2		
Bradford	May 20-June 11	2		
Do	Oct. 23-Nov. 5	6		
Bristol	Oct. 16-29	7		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 9, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Great Britain—Continued.				
England and Wales—Con.				
Cardiff	June 19-July 2	4		
Do	Oct. 23-29	1		
Leeds	July 17-Nov. 12	26		
Liverpool	July 17-30	1		
London	May 15-June 18	2		
Manchester	Oct. 2-Nov. 22	5		
Newcastle-upon-Tyne	June 12-Oct. 29	13		
Sheffield	June 12-Oct. 29	37		
Stoke-on-Trent	Aug. 21-27	1		
Scotland—				
Dundee	May 29-Sept. 3	6		
Greece	June 1-30	14		
Saloniki	July 12-Aug. 15		2	
Guatemala:				
Guatemala City	June 1-30		9	
Guinea (French)	June 4-10	9		
India	Apr. 17-Sept. 24			Cases, 77,885; deaths, 1[illegible],509.
Bombay	May 28-Oct. 8	250	158	
Calcutta	May 8-Oct. 22	418	319	
Karachi	May 15-Aug. 6	10	5	
Madras	May 22-Oct. 29	42	9	
Rangoon	May 8-Oct. 22	209	160	
India, French Settlements in	Mar. 20-Aug. 27	174	155	
Indo-China (French)	Mar. 21-Sept. 20			Cases, 332.
Saigon	May 14-Sept. 9	4	1	
Iraq:				
Baghdad	Apr. 10-Oct. 22	10	5	
Basra	Apr. 10-Oct. 15	11	10	
Italy	Apr. 10-May 21	13		
Rome	June 13-July 17	3		Including consular district.
Jamaica	May 29-Oct 29	47		Reported as alastrim.
Japan	Apr. 3-May 7			Cases, 19.
Nagasaki City	June 20-Aug. 14	26	7	
Taiwan Island	May 21-31	1		
Java:				
Batavia	May 22-Nov. 12	36	15	
East Java and Madura	Apr. 21-Sept. 30	45	1	
Latvia	Apr. 1-30	1		
Mexico	Mar 1-June 30			Deaths, 621.
Acapulco	Aug. 28-Sept. 17	2	2	
Durango	June 1-30		1	
Guadalajara	Nov 15-21		1	
Monterey	July 1-31	6	4	
San Luis Potosi	May 29-Aug. 13		11	
Tampico	June 1-July 31	1	2	
Torreon	Aug. 7-Oct 1		2	
Morocco	Apr. 1-Aug. 31	283		
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in 2 localities.
Pasir Residency	Apr. 30-May 6			Epidemic outbreak.
Samarinda Residency	May 21-27			Do.
Nigeria	Mar. 1-July 31	2,844	658	
Paraguay:				
Asuncion	July 10-23		2	
Persia				
Teheran	Feb. 21-July 23		16	
Poland	Apr. 10-Aug. 6	20	2	
Portugal.				
Lisbon	May 29-Nov. 5	32	1	
Oporto	Sept. 3-9	1		
Senegal:				
Medina	July 4-10	7		
Siam	Apr. 1-Oct. 15			Cases, 256; deaths, 67.
Bangkok	May 1-Sept. 10	16	8	
Spain:				
Madrid	Aug. 1-31		1	
Valencia	May 29-June 4	3		
Do	Sept. 25-Oct. 1	1		
Straits Settlements	June 12-18			Cases, 3.
Singapore	Apr. 1-June 18	7	2	
Sumatra:				
Medan	June 5-Aug. 20	3		
Switzerland:				
Berne	June 26-July 2	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 9, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Syria:				
Damascus	Aug. 11-Oct. 20	30		
Tunisia	Apr. 1-June 10			Cases, 10.
Tunis	June 1-10	1		
Union of South Africa:				
Cape Province	July 7-Aug. 20			Outbreaks.
Do	Oct. 2-8			Do.
Elliott district	May 11-June 10			Do.
Idutywa district	July 3-9			Do.
Kalanga district	May 11-June 10			Do.
Mount Ayliffe district	July 31-Aug. 6			Do.
Orange Free State	Aug. 7-13			Do.
Transvaal—				
Barberton district	May 1-7			Do.
Venezuela:				
Maracaibo	July 12-Oct. 3		4	

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-July 20			Cases, 399; deaths, 39.
Algiers	May 11-Oct. 20	34		
Oran	May 21-Aug 31	34		
Argentina:				
Rosario	Aug. 1-31		1	
Bulgaria	Mar. 1-Aug. 10			Cases, 245; deaths, 21.
Sofia	June 4-Nov. 4	20	1	
Chile:				
Antofagasta	Apr 16-May 31	1		
Do	Sept 25-Oct. 1		1	
Concepcion	May 29-June 4		1	
La Calera	Apr. 16-May 31	1		
Ligua	Mar 16-31	2		
Puerto Montt	Apr. 16-May 31	1		
Santiago	do	5	1	
Talcahuano	July 10-16		1	
Valparaiso	Apr 16-Sept. 3	5	3	
China:				
Manchuria—				
Harbin	July 25-Aug. 21	5		
Mukden	May 29-June 4	1		
Tientsin	July 10-24	3		
Chosen	Feb 1-July 31			Cases, 793; deaths, 68.
Chemulpo	May 1-Aug. 31	3		
Gensan	do	4		
Seoul	Apr. 1-Aug. 31	35	3	
Czechoslovakia	do			Cases, 55
Egypt	May 28-Sept. 30			Cases, 133; deaths, 22.
Alexandria	May 21-Aug. 5	13	5	
Cairo	Jan. 15-July 1	43	16	
Port Said	Sept 24-30	1		
Estonia	Apr 1-June 30			Cases, 5.
Greece	June 1-30	2		
Athens	June 1-July 31		9	
Guatemala:				
Guatemala	Aug. 25-31		1	
Iraq:				
Baghdad	Apr. 24-30	1		
Irish Free State:				
Cork County	July 3-9	1		In urban district.
Donegal County—				
Letterkenney	Oct. 16-22	4		
Latvia	Apr 1-July 31	32		
Lithuania	Feb. 1-Aug. 31	365	50	
Mexico	Feb. 2-June 30			Deaths, 166.
Mexico City	May 29-Nov. 5	95		Including municipalities in Federal District.
San Luis Potosi	July 31-Aug. 6		1	
Morocco	Apr. 1-Sept. 20	981		
Palestine	May 24-Oct. 10			Cases, 32.
Haifa	do	10		
Jaffa	Aug. 2-Oct. 3	3		
Jerusalem	June 28-Aug. 15	3		
Mahnaim	May 17-23	1		In Safad district.
Nazareth	July 19-25	1		
Safad	May 17-Aug. 8	10		
Tel Aviv	Oct. 1-10	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 9, 1927—Continued.

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Peru:				
Arequipa	Apr. 1-30		1	
Do	Aug. 1-Sept. 30		3	
Poland	Apr. 10-Oct. 8	1,142	106	
Portugal:				
Lisbon	May 29-June 4	1		
Oporto	Aug. 20-27	1		
Do	Oct. 23-29	1		
Rumania	Apr. 3-Aug. 27	1,000	69	
Spain:				
Seville	Aug. 19-25		2	
Syria:				
Aleppo	Sept. 11-17	2		
Tunisia	Apr. 22-July 20			Cases, 158.
Tunis	July 5-Aug. 21	2		
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa	Apr. 1-30			Cases, 55; deaths, 8, native. In Europeans, cases, 2.
Cape Province	Apr. 1-Oct. 15	42	5	
Albany district	June 5-11			Outbreaks.
East London	May 22-28	1		Do.
Glen Gray district	May 1-7			Do.
Kentani district	June 26-July 2			Do.
Port Elizabeth	Aug. 7-13	1		Do.
Qumbu district	May 1-7			Do.
Umzimkulu district	June 26-July 2			Do.
Natal	Apr. 1-Aug. 6	7	3	
Impendhle district	June 5-11			Do.
Orange Free State	Apr. 1-Oct. 1	5		
Transvaal	Apr. 1-30	1		
Johannesburg	July 3-Aug. 20	19	5	
Do	Oct. 9-15	5		
Yugoslavia	May 1-Oct. 31			Cases, 25; deaths, 5.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Ashanti:				
Obuasi	Aug. 6	1	1	
Dahomey (West Africa):				
Porto Novo	July 1	1	1	In Syrian woman.
Gold Coast	Apr. 1-June 30	60	22	
Do	Aug. 4	2		
Ivory Coast	July 29	1	1	
Liberia:				
Monrovia	May 29-Sept. 10	5	5	
Senegal	Oct. 3-23			Cases, 29; deaths, 22.
Dakar	July 9	1		
Do	Aug. 8		2	
Do	Sept. 17			Present.
Do	Oct. 3-16	12	7	
Geoul	Sept. 26-Oct. 2	1	1	
Island of Goree	Aug. 22-Sept. 4	2	2	
Kebemer	Oct. 9-23	2	2	
Kelle	do	2	1	
Khombole	Aug. 1-Oct. 9	6	3	
Louga	Sept. 26-Oct. 2	1	1	
Mehke	Oct. 17-23	1		
M'Bour	May 27-June 19	5	5	
N'Dande	Oct. 17-23	1	1	
Ouakam	June 2-Aug. 14	4	2	
Pout	Sept. 19-25	1	1	
Rufisque	Oct. 9-16	1	1	
Sebikotane	Oct. 17-23	1	1	
St. Louis	Aug. 1-Oct. 2	3	3	
Thies	July 10	1	1	In European.
Do	Sept. 12-Oct. 23	11	11	
Tiaroye	Aug. 22-Sept. 4	1	1	
Tivaouane	May 27-Sept. 11	6	5	
Togoland:				
Meiatza	Aug. 15-21	1	1	
On vessel:				
S. S. Desirade	Sept. 16	1	1	At Leixoes, Portugal, in passenger from Dakar, Senegal.

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TREASURY DEPARTMENT

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Smallpox and Poliomyelitis in the United States
Muscle Training in Infantile Paralysis
Clonorchiasis Investigations
Automobile Accidents, 1922-1926

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UNITED STATES PUBLIC HEALTH SERVICE

HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

ASST. SURG. GEN. R. C. WILLIAMS, *Chief of Division*

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PUBLIC HEALTH REPORTS

VOL. 42 DECEMBER 23, 1927 NO. 51

PREVALENCE OF SMALLPOX IN THE UNITED STATES

Telegraphic reports from the State health officers of 44 States for the three weeks ended December 10, 1927, show cases of smallpox as follows: Week ended November 26, 1927, 642 cases; week ended December 3, 604 cases; and week ended December 10, 769 cases.

Reports from 42 States are available for the second week in December of the years 1925, 1926, and 1927. These States reported 380 cases of smallpox for the week in 1925, 645 cases in 1926, and 741 cases for the week in 1927. Reports for the week ended December 17, 1927, will be found on page 3151 of this issue of the Public Health Reports.

PREVALENCE OF POLIOMYELITIS IN THE UNITED STATES

Since the middle of September the incidence of poliomyelitis has been decreasing in the United States, but the number of cases reported for the second week of December this year is several times the number reported for the corresponding weeks of the years 1925 and 1926.

For the week ended December 12, 1925, 40 States reported 38 cases of poliomyelitis; for the corresponding week of 1926 these States reported 39 cases; and for the week ended December 10, 1927, they reported 142 cases of poliomyelitis.

Reports from 42 States for the three weeks ended December 10, 1927, are as follows: Week ended November 26, 1927, 195 cases of poliomyelitis; week ended December 3, 1927, 193 cases; week ended December 10, 1927, 161 cases.

MUSCLE TRAINING IN THE TREATMENT OF INFANTILE PARALYSIS[1]

REVISED FROM AN ARTICLE WHICH APPEARED IN THE BOSTON MEDICAL AND SURGICAL JOURNAL AND REPRINTED BY PERMISSION OF THE EDITOR OF THAT JOURNAL

By Wilhelmine G. Wright

INTRODUCTION

The recent epidemics of infantile paralysis have left behind them many victims.

The prevention of deformities and the restoration of these children to a useful amount of strength are the problems to be dealt with.

[1] Editor's Note.—It is believed that the republication and wide circulation of this article will greatly aid the important work of rehabilitation which is necessary following every epidemic of acute poliomyelitis. Only the more useful exercises are given, others following the same principles will be suggested to the

The former is best accomplished by rest and mechanical relaxation of the affected muscles under the supervision of a competent orthopedic surgeon. Careful watch must be kept from the very start to prevent toe drop, toeing out, a sagging shoulder, or other positions which stretch weakened muscles. Sandbags and boxes in bed, and cradles to bear the weight of the bedclothes, are some of the devices which are useful for this purpose. The other problem of bringing back the maximum of strength to the weakened muscles can only be solved by carefully directed exercises.

In most cases this duty falls best upon parents, who must first be trained by the family physician. It is for his guidance in prescribing the exercises, and from time to time changing them as the muscles gain in strength, that this paper has been written. It therefore assumes a knowledge of muscle and joint anatomy, but goes into detail concerning the exercises, with which the physician is presumably unfamiliar.

It has been the writer's experience, during the years in which she has been the assistant of surgeons in the treatment of infantile paralysis, that better results have been obtained from the combination of physician and parent than where the management of the exercises has been left to an unskilled gymnast or masseur, who has neither the scientific knowledge of the physician nor the patience and enthusiasm of the parent. Accurate anatomical diagnosis is essential, not necessarily of the muscles affected, but of the exact movements which are weaker than normal. (See Reprint No. 1182 from the Public Health Reports for October 7, 1927, vol. 42, No. 40, pages 2431–2442).

The training of the muscles should be begun as soon as the patient's limbs can be moved freely without pain. In some cases this will be within three weeks after the initial attack and in some after a much longer period. It is possible also to accomplish a great deal for cases that have been neglected for years. Premature manipulations, on the other hand, and ill-directed exercise, have often greatly retarded or prevented the maximum recovery possible. Allowing patients to be on their feet too soon and too much has perhaps caused more

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physician by the less frequent types of paralysis. The international nomenclature for muscles (B. N. A.) has been used, but the old names have been added when these are not at once suggested by the new.

For a number of years various State health departments and local health authorities of communities where epidemics of infantile paralysis have prevailed have been advised by the United States Public Health Service of the usefulness of this article. It may be found useful, not only to health officers, but also to physicians and to some of the more intelligent of the families of poliomyelitis patients.

Just as with immunization against diphtheria, the aftercare of poliomyelitis, though theoretically a function of the private practitioner, is not usually given attention unless taken up by public-health agencies and urged and assisted by publication. Only in rare localities can a qualified nurse or physiotherapist be employed to assist in this aftercare or an orthopedic surgeon to supervise it. Many physiotherapists or orthopedic surgeons, in fact, have not given adequate attention to this particular problem to get the maximum improvement possible; the methods usually used in other orthopedic conditions are in general not to be applied in such a campaign. Aftercare is probably the most important public-health function in an outbreak of infantile paralysis. The results of its neglect are everywhere apparent.

crippling than any other factor in the care, or lack of care, of these patients. Weight bearing is very deleterious to weakened muscles.

REASON FOR THE USE OF EXERCISES IN INFANTILE PARALYSIS

Almost every muscular contraction is brought about by the stimulation of nerves from more than one spinal center.

In infantile paralysis "a localized myelitis has attacked the cord and has destroyed more or less at random certain areas of spinal nerve centers. Unless the cord lesion has been extensive the chances are rather against the total destruction of all the centers and associations of any large number of muscles, some centers or associations having perhaps escaped." For this reason "there exists in many paralyzed limbs a possible amount of muscular power that is not suspected and will not be available unless cultivated and developed." "The absence of function in a muscle or group of muscles does not necessarily mean permanent paralysis, even in the later stages of the affection."

The principles which underlie the training of muscles which have partially or wholly lost their power of voluntary contraction as a result of infantile paralysis do not in any way differ from those underlying the development of normal muscles. The result in both instances is an improvement in the nutrition of the muscle fiber and in the facility with which the nerves carry their impulses.

The contraction of muscles and the alternate flexion and extension of joints exert a pumping action on the veins and lymphatics which is necessary to the proper flow of the blood and lymph. Moreover, there is a reflex dilation of the arterioles of a contracting muscle and of the corresponding area of the skin. Whenever, therefore, a limb is in disuse its circulation is seriously impaired and the muscles waste from lack of nourishment.

In paralysis the beneficial effects of muscular contraction on the circulation may be in part supplied by massage, heat, passive movements, etc., and they undoubtedly do, to a certain extent, prevent the wasting away of the paralyzed muscles. Wherever there is, however, the ability to contract a muscle even slightly by an effort of the will, the muscle cells are more favorably affected by this contraction than by any quickening of the circulation by other means. When not used, the muscle cells degenerate, and the only way to increase their nutrition is to make them work.

If a lively circulation is started in the muscle before it contracts, the contraction will naturally be attended by greater benefit to the muscle fibers. For this reason it is advisable in treating cases of infantile paralysis to make use of the therapeutic measures mentioned above before giving the exercises, even when the voluntary

power of contraction is fairly good. Seriously weakened muscles should be protected against cold at all times.

In infantile paralysis certain nerve cells supplying a muscle are destroyed, and those which are left, being unaccustomed to work together, perform their work badly and without coordination.

The possibility of training nerves to work together with precision is shown in the formation of habits. In his Outlines of Psychology Royce says, "parts that have often functioned together tend to function more easily together again." The improvement of the nervous system is due to the perfection of the connection between the synapses and the nerve cells. Each time a partially paralyzed muscle contracts, it not only improves the nourishment of its fibers, but also the coordination of the nerves which stimulate it.

The amount of improvement possible for any given muscle is, of course, proportionate to the number of uninjured nerve cells which supply it. This is an impossible thing to determine accurately and by far the safest plan in directing the exercises is to assume that every muscle is capable of attaining the normal.

If any muscle shows no signs of attaining anything like a useful amount of function after the exercises have been faithfully carried out for a sufficiently long time (at least a year), it may be advisable to discontinue work on it, as it is an advantage to give as few exercises as possible, in order to avoid unnecessary mental fatigue in the patient. Whether or not to abandon exercises for any given muscle should be partly determined by the importance of the muscle. If it is essential for walking, the time, which is perhaps uselessly expended upon it, should not be grudged, as there is nothing to lose, and everything to gain, by giving it every possible chance for recovery.

PRACTICAL DETAILS OF THE TREATMENT

It should never be left to the patient to do his exercises alone, even when he is old enough to understand his own case. The response of muscle and nerve is dependent on the strength of the stimulus, and the volition of the patient is greatly aided by the outside stimulus of a word of command. When a muscle does not function at all it is a help if the physician puts his hand on the muscle to be contracted and performs the movement passively, while urging the patient to make the greatest possible effort. This is not what is usually understood by the term "passive movement," because as far as the patient's will is concerned it is active. The patient's mental attitude is always the first obstacle to be overcome. Whoever directs the exercises should discourage "I can't," and make the patient feel that "he never has, but he is going to." If they are to be a success at all a great amount of faith and enthusiasm is necessary on the part of the physician or parent who oversees the exercises.

While performing the exercises the paralyzed limbs should be uncovered, as the action of the muscles can not be accurately observed through clothing. When the paralysis is extensive, the patient, if a young child, should be entirely undressed for the treatment.

A table or other hard, smooth, horizontal surface, preferably not the floor, is absolutely necessary for the proper performance of the exercises, as it eliminates as much as possible the resistance of friction and enables a weak muscle to perform movements which would be wholly impossible for it on a soft, yielding surface like that of a bed or couch. The table should be wide enough to allow the full sweep of the leg in hip abduction when the patient is lying on the back, or in hip flexion when lying on the side.

In some cases, movements can be more easily made in warm water, or in warm salt water of increased buoyancy. It is usually best, however, to do the real training on the table, where the motion and position can be accurately supervised, leaving the water exercises for patients who have learned the movements which they need to practice and those which they need to avoid.

In all exercise periods, the whole attention of the patient should be required, or his ability to use his muscles will be much underestimated and the exercises will be much less effective. For this reason it is desirable that no person except the one who directs the exercises should be present. The presence of other children should be absolutely prohibited and no toys should be allowed. If the parents are ingenious the exercises themselves may be turned into an interesting game, without on that account making any sacrifice of precision in the performance of them.

The following exercises are given in order of progression from those which the weakest muscles are capable of performing to those which require normal strength. In fitting the exercises to the patient, each group of muscles must be tested as to what it can do, and given as hard an exercise as it is capable of performing without fatigue. As soon as the muscles outgrow the exercise first given, it should be discarded and the one next in order of strength should be taken up, and so on.

A rough method of classifying the muscles according to the amount of resistance they can overcome is the following:

1. Normal muscle—compare with other side if the latter is unaffected.
2. Muscle capable of overcoming gravity and outside force—good.
3. Muscle capable of overcoming gravity alone—fair.
4. Muscle capable of overcoming friction of joint and table—poor.
5. Muscle incapable of producing movement but showing contraction—trace.
6. Muscle showing no tightening of tendon or muscle belly—totally paralyzed.

This furnishes a simple means of recording and noting progress. Thus, if the knee can be extended while the patient lies on his side, the quadriceps belongs to class 4. If, later, it can be extended when the patient sits on the table with his legs hanging down, it belongs to class 3, etc.

In every case where the operator resists with his hand the action of a set of muscles, he should be careful to graduate his resistance from weak at the beginning of the movement to strong in the middle, and to weak again at the end of the movement, in accordance with the change in leverage that takes place during the movement. The resistance at every point should be just a little less than would stop the movement. It is time to begin resistance in any given exercise when the movement can be performed freely without resistance to its fullest extent. All movements should be carried smoothly through the full arc of motion, and assistance given at the end when the patient can not complete the arc actively.

It is a good rule to let the patient go through all his exercises once a day for six days in the week. The one day off prevents his becoming stale. Each exercise may be performed 10 or 12 times in succession with pause enough between the movements for complete recovery from fatigue, so that the second movement is done as strongly as the first and the tenth as the second.

Where contractures of joints exist, they should be done away with before exercises are attempted. When a weakened muscle is kept on the stretch by contracted antagonists there is no possibility of strengthening it until the resistance is removed.

In all exercises and positions the stretching of weakened muscles is to be carefully avoided.

EXERCISES

THE TRUNK

Flexors of the Spine

(*Obliquus externus abdominis, obliquus internus abdominis, transversus abdominis*—old name *transversalis*—*and rectus abdominis*)

plus

Flexors of the Thighs on the Trunk. (*Psoas, iliacus, rectus femoris, etc.*)

NOTE.—It is difficult to exercise the abdominal muscles (flexors of the spine) without at the same time making use of the hip flexors. It is often desirable to do so, however, since abdominal paralysis may be associated with hip flexion contracture which would be increased by any strengthening of the hip flexors. The following exercises are designed to strengthen the abdominal muscles while making as little use as possible of the hip flexors:

1. The patient lies on his back on the table, takes in a deep breath and forcibly expels it. The abdominal muscles are used in forcible exhalation.
2. The patient lies on his back on the table and contracts his abdominal muscles in an attempt to make the small of his back touch the table.

3. The patient lies on his back and lifts his head until his chin touches his chest. The abdominal muscles work in this exercise as a steadying force. This exercise can be made more difficult by having the patient reach his arms forward and lift his shoulders from the table, thus flexing his spine, but stopping short of coming to a sitting position.

4. The patient lies on his back with both arms stretched above his head grasping a stick in both hands. The operator grasps the middle of the stick and offers resistance while the patient pushes it up and forward to his thighs. The patient must keep his elbows straight during the exercise. The abdominal muscles are used as steadying forces and their contraction is proportionate to the resistance used.

If it is desired to exercise the abdominal muscles and both hip flexors simultaneously the following exercises may be used:

5. The patient lies on his back, draws both knees up to his chest, and lifts his hips from the table as if about to turn a back somersault. The resistance is the weight of the legs and hips.

If the back is hollowed, knees flexed, and feet drawn toward the body, but not lifted from the table, the flexors of the hips are probably doing most of the work and the abdominal muscles very little.

The movement may be done in three ways:

(*a*) With assistance from the operator who places his hand under the patient's knees and pushes them up, at the same time letting the patient do as much of the work as possible. When there is no visible contraction of the muscles the patient should still exert his will to perform the movement, while the operator performs it for him.

(*b*) By unaided contraction of the muscles.

(*c*) With resistance from the operator who places his hand on the patient's knees and pushes down on them with not quite force enough to stop the movement.

6. The patient sits in a reclined position, with the back resting against a slanting support, arms folded and knees held down. He then raises his body to a sitting position.

The resistance is the weight of the body and the progression with improvement in strength is toward a lying position as the starting point.

Care should be taken that all the preceding exercises are performed symmetrically, as there is often greater weakness of the muscles on one side than on the other.

Extensors of the Spine

(*Sacro-spinalis*—old name *erector spinae*—*etc.*)

plus

Extensors of the Thighs on the Trunk. (*Glutaeus maximus, etc.*)

NOTE.—These exercises are for paralysis of the back muscles, which can not be exercised without at the same time exercising the extensors of the hips:

1. The patient lies on his back on the table with a stick grasped in both hands, both arms stretched vertically upward. The operator grasps the middle of the stick and offers resistance, while the patient forces his arms back to the table. The back muscles work as steadying forces, their contraction being proportionate to the resistance offered.

2. The patient sits with the trunk bent forward, hips flexed, and raises the trunk to the erect position.

The resistance is the weight of the trunk.

The progression in strength is:

(a) With hands on hips.

(b) With hands behind neck, elbows back.

3. The patient lies face downward on the table with feet held down and hands clasped behind the back at the waist line and raises the trunk as high as possible, keeping the head thrown back and chin drawn in.

The resistance here is the weight of the trunk.

The exercise may be made more difficult by raising the center of gravity as in preceding exercise.

A unilateral paralysis of the spinal extensors, abdominal or shoulder muscles, always tends to produce a lateral curvature of the spine, which can only be guarded against by the use of a suitable support. As it is impossible to predict whether the convexity of the curve will be toward the weaker muscles or away from them, anyone unfamiliar with the treatment of lateral curvature by exercises might do more harm than good by an attempt to train the muscles. The exercises given above are, however, perfectly safe, if the patient's back is carefully watched to prevent twisting and bending in raising the trunk.

Lateral Flexors of the Spine

(*Quadratus lumborum, rectus abdominis, obliquus abdomini externus and internus, and sacro-spinalis*—old name *erector spinae*)

1. The patient lies face down on the table and draws the hip toward the shoulder of the same side, keeping the knee straight and dragging the leg up along the table.

(a) Without other resistance than the friction of the table.

(b) With resistance from the operator who holds the patient's ankle and pulls down on it, while the patient tries to draw the foot away from him.

2. The patient lies on his back on the table and adducts the arm on the affected side against resistance from the operator. This exercises the external trunk muscles on that side and has the advantage of not involving movement of the spine.

3. The patient lies on the unaffected side with the hand of that side grasping the opposite shoulder and with the arm of the affected side stretched down along the leg. The operator holds down the patient's leg while the patient attempts to raise his head and body from the table.

A unilateral paralysis of these muscles can cause a limp in walking when the leg muscles are very little or not at all affected. This is due to the fact that the hip on the paralyzed side is dropped when the foot is raised, instead of being slightly raised as it is normally.

THE LOWER EXTREMITY

Flexors of the Thighs on the Trunk. (*Psoas major, iliacus, rectus femoris, sartorius, pectineus, and adductor brevis and longus*)

1. The patient lies face down with his legs hanging off the table. The operator lifts the affected leg backward until both hip and knee are straight, and offers resistance on the ankle while the patient draws the knee under the table. In this movement gravity assists the action of the hip flexors, and the resistance should be just enough to neutralize its action and give work to the very weakest hip flexors.

2. The patient lies on his left side if the left leg is to be exercised, while the operator holds the right leg up out of the way, or vice versa. The patient then flexes the hip, bringing the knee up to the chest.

(a) With assistance from the operator.

(b) By unaided contraction of the muscles.

(c) With resistance on the front of the thigh.

3. The patient lies on his back and brings the knee up to the chest.

(a) Without other resistance than the weight of the leg.

(b) With resistance from the operator who exerts a downward pull on the ankle.

The operator should steady the patient's knee, as it is important that the leg should not be allowed to twist.

Exercises for the flexors of both thighs were given in connection with exercises for the trunk, sections 5 and 6.

Extensors of the Lower Leg on the Thigh. (*Quadriceps femoris*)

1. The patient lies on his back on the table and tightens the knee cap by contracting the quadriceps muscles, without moving the leg. This exercise is called "setting the knee" and is useful for weak or strong muscles.

2. The patient lies face down with his legs hanging over the edge of the table. The operator steadies the thigh with one hand and with the other holds the patient's heel against his buttock and offers resistance while the patient extends his knee. The principle is the same as in hip flexor exercise No. 1.

3. The patient lies on his side (left side for left leg, and vice versa). Starting with the knee completely flexed, he extends it until the leg is in a straight line with the thigh.

(a) With assistance on the back of the ankle.

(b) By unaided contraction of the muscles.

(c) With resistance on the front of the ankle.

4. The patient sits on the edge of the table with knees bent at a right angle, legs hanging down, and brings the foot up until the leg is horizontal and is in a line with the thigh.

(a) With resistance of gravity alone.

(b) With the resistance of the operator's hand on the front of the ankle.

Exercises for the restoration of knee extension power are of great importance. Until the quadriceps is strong enough to allow the patient to stand and bend the knee without falling, all walking must be done with the knee locked, and a genu recurvatum may result unless a brace is used.

Extensors of the Thigh on the Trunk

(*Glutaeus maximus, adductor magnus, biceps femoris, semitendinosus, and semimembranosus*)

1. The patient lies on his back and the operator lifts the affected leg, then offers resistance as the patient forces it down to the table as strongly as possible. The patient's knee should be straight and the operator should support the ankle with one hand, but should give resistance with the other hand placed under the thigh just above the knee.

2. The patient lies on his side (left side for left leg, and vice versa) with the hip flexed as far as is possible with the knee extended, and brings the leg back until it is in line with the body.

(a) With assistance on the front of the knee.

(b) By unaided contraction of the muscles.

(c) With resistance on the back of the knee.

3. The patient lies face down on the table with both legs from the hips down hanging over the edge. In this position he raises the leg with the knee straight until it is in a line with the body or slightly higher.

(a) With resistance of gravity alone.

(b) With the resistance of the operator's hand placed just above the knee.

4. The exercises given above for the extensors of the spine are also powerful exercises for the extensors of both hips.

The training of the hip extensors is very important, as good hip extensors and fair hip flexors enable the patient to walk with the help of braces, even when all other leg muscles are badly affected.

Flexors of the Lower Leg on the Thigh

(Biceps femoris, semitendinosus, semimembranosus, gracilis, sartorius, gastrocnemius, and popliteus)

1. The patient lies on his back on the table and the operator holds up his affected leg and steadies the thigh in a vertical position while resisting flexion of the knee by pushing with his other hand against the back of the ankle. The resistance may be slight enough to allow action by the weakest possible knee flexors, or great enough to give work to muscles nearly normal.

2. The patient lies on his side (left side for left leg, and vice versa), with the knee extended, and bends the knee, bringing the heel up until it touches the buttock.

(*a*) By unaided muscular contraction.

(*b*) With resistance on the back of the ankle.

3. The patient lies prone and bends the knee, bringing the heel up to the body.

(*a*) With the resistance of gravity.

(*b*) With the resistance of the operator's hand on the back of the ankle.

This movement is performed mainly by the hamstring muscles and can be very well done in the absence of all power in the gastrocnemius. A patient with a weak quadriceps and normal hamstrings can walk without hyperextending his knee. He does this by leaning so far forward that the action of gravity tends to extend and not to flex the knee.

If it is desired to exercise the inner hamstrings (semitendinosus and semimembranosus) alone, the patient should be asked to rotate the lower leg inward before flexing it; if the outer (biceps femoris), to rotate it outward.

Abductors of the Thigh

(*Tensor fasciæ latæ*—old name *tensor fasciæ femoris*—*glutaeus medius, and glutaeus minimus*)

1. The patient lies on his back, knees straight and legs together, and moves the leg to be exercised straight sideways, keeping the knee and foot directed upward to prevent rotation in the hip joint.

(*a*) With assistance on the inner side of the ankle.

(*b*) By unaided muscular contraction.

(*c*) With resistance on the outer side of the ankle.

2. The patient lies on his side (right side for left leg, and vice versa), and raises the leg straight sideways, keeping it in a line with the body.

(*a*) With the resistance of the weight of the leg.

(*b*) With the resistance of the operator's hand on the outer side of the ankle.

Adductors of the Thigh

(Gracilis, pectineus, quadratus femoris, and adductor longus, brevis, and magnus)

1. The patient lies on his unaffected side and the operator holds up his affected leg and offers resistance while the patient attempts to adduct, that is, to bring it down to the good leg.

This is an exercise for weak or strong muscles according as the resistance is light or heavy.

2. The patient lies on his back with the leg abducted, knee straight, and draws it in toward the other leg, keeping the knee and foot directed upward.

(a) With assistance on the outer side of the ankle.

(b) By unaided muscular contraction.

(c) With resistance on the inner side of the ankle.

3. The patient lies on his back with the knees and hips flexed, heels drawn up to the body, and soles resting on the table, knees spread apart, and brings the knees together, thus adducting the thighs.

(a) With the resistance of gravity (the muscles have by no means the whole weight of the legs to lift).

(b) With the added resistance of the operator's hands pushing against the inner sides of the knees.

4. The patient lies on the affected side and lifts the affected leg against gravity until it touches the good leg which the operator is holding up out of the way.

(a) With the resistance of gravity.

(b) With the operator's hand resisting against the inner side of the leg.

Inward Rotators of the Thigh

(*Tensor fasciæ latæ*—old name *tensor fasciæ femoris*—*glutaeus medius* (*anterior half*), *and glutaeus minimus*)

1. The patient lies prone with the knee of his affected leg bent to a right angle and rotates the thigh inward, so that the lower leg points outward. Slight resistance may be given on the outer side of the ankle. Care should be taken that the hips do not roll and that the knees are kept together.

2. The patient sits with his legs hanging from the knee over the edge of the table and rotates his thigh inward so that the lower leg turns outward, the foot moving away from the other foot.

(a) With the resistance of gravity.

(b) With resistance on the outer side of the ankle.

Outward Rotators of the Thigh

(*Glutaeus maximus, obturator externus, obturator internus, gemelli, pyriformis, and sartorius*)

1. The patient lies prone with the knee of his affected side bent to a right angle and rotates the front of the thigh outward, so that the half-flexed lower leg moves inward across the other leg. Resistance may be given on the inner side of the ankle. Care should be taken in this exercise that the hips do not roll and that the knees are kept together.

2. The patient sits with his legs hanging from the knee over the edge of the table and rotates the thigh outward, which causes the lower leg to move inward and across behind the other leg.

Dorsal Flexors of the Foot on the Lower Leg

(*Tibialis anterior*—old name *tibialis anticus*—*peroneus tertius, extensor hallucis longus*—old name *extensor proprius hallucis*—*and extensor digitorum longus*)

NOTE.—For paralysis of the anterior muscles of the lower leg. If it is desired to exercise the tibialis anterior without the extensors of the toes the patient should be made to concentrate his thoughts on moving the foot and not the toes, and the movement should not be resisted.

1. The patient lies prone with the knee flexed at right angles so that the lower leg is directed vertically upward. The operator should hold the patient's leg firmly and steady it, so that only the foot can be moved. The patient then draws the front of the foot down toward the knee.

(*a*) With the assistânce of gravity alone.

(*b*) With the resistance on the top of the foot just above the toes.

2. The patient sits on the edge of the table with the legs hanging from the knee down, and while the operator steadies the leg, raises the front of the foot as high as possible.

(*a*) With the resistance of gravity alone.

(*b*) With the resistance of the operator's hand on the top of the foot just above the toes.

See note following the exercises for the extensors of the toes.

Plantar Flexors of the Foot on the Lower Leg

(*Gastrocnemius, soleus, plantaris, flexor hallucis longus, tibialis posterior*—old name *tibialis posticus—flexor digitorum longus, peroneus longus, and peroneus brevis*)

NOTE.—For paralysis of the calf muscles.

1. The patient takes the same position as for exercise 1 of the dorsal flexors of the foot, and raises the front of the foot till it points upward, at the same time drawing down the heel.

(*a*) With assistance on the top (dorsum) of the foot.

(*b*) With the resistance of gravity alone.

(*c*) With the added resistance of the operator's hand pushing down on the sole of the foot across the ball or pushing up on the back of the heel.

2. The patient lies face down with his toes over the edge of the table and performs plantar flexion.

(*a*) Against gravity.

(*b*) With pressure against the sole of the foot.

The tendo calcaneus—old name tendo Achillis—should be observed in the preceding exercises to make sure that the calf muscles are really working, as the flexors of the toes are able to draw the front of the foot down perceptibly when there is very little power in the other muscles.

The calf muscles are of very little practical use in walking until they are strong enough to allow the patient to stand on the ball of the foot with the heel raised from the floor. Until then the patient should never be allowed to stand without the protection of a high heel.

Supinators of the Foot—The muscles which turn the sole of the foot inward into the position of Varus

(*Tibialis anterior and tibialis posterior*—old names *tibialis anticus and tibialis posticus—flexor digitorum longus, flexor hallucis longus, soleus, and gastrocnemius*)

1. The patient lies on his face with his foot projecting beyond the end of the table and turns the sole of the foot inward, i. e., supinates it. Gravity is eliminated in this exercise.

2. The patient lies on the affected side and lifts the sole of the foot from the table, keeping the ankle in contact with the table.

(*a*) Without resistance.

(*b*) With resistance on the inner side of the foot.

See note following the exercises for the extensors of the toes.

Pronators of the Foot—The muscles which turn the sole of the foot outward into the position of Valgus

(*Peroneus tertius, peroneus longus, peroneus brevis, and extensor digitorum longus*)

1. The patient lies on his face as for the first supinator exercise and turns the sole of the foot outward or pronates it.

2. The patient lies on his sound side and lifts the sole of the affected foot sidewise from the table, or pronates it.

(*a*) Without resistance.

(*b*) With resistance on the outer side of the foot.

See note following the exercises for extensors of the toes.

NOTE.—Pronation of the foot can be done without using the extensor digitorum longus, and if the exercise is given for the purpose of strengthening the peroneals the patient should concentrate on relaxing the extensor.

Flexors of the Toes

(*Flexor hallucis longus, flexor digitorum longus, flexor digitorum brevis, quadratus plantæ*—old name *flexor accessorius—and lumbricales*)

1. The patient sits with the legs hanging from the table and curls the toes under, making a "fist" with the foot.

(*a*) Without resistance.

(*b*) With resistance from the operator, who places one finger across underneath the toes and pushes up against them.

With strong flexor muscles not only the toes are flexed but the whole sole of the foot is wrinkled.

See note following the exercises for the extensors of the toes.

Extensors of the Toes

(*Extensor hallucis longus*—old name *extensor proprius hallucis—extensor digitorum longus, extensor digitorum brevis, and lumbricales*)

1. The patient sits with the legs hanging off the table and raises the toes.

(*a*) With the resistance of gravity alone.

(*b*) With resistance from the operator who places one finger across the tops of the toes and pushes down against them.

NOTE.—For some time after the attack the patient should not be allowed to walk even if he is able to do so, but later on, if he can walk without braces, exercises in balancing, tip-toe walking, heel raising and knee bending, etc., are useful for the further training of the leg muscles.

THE UPPER EXTREMITY

Elevators of the Shoulder Girdle

(*Trapezius* (*upper part*), *and levator scapulæ*—old name *levator anguli scapulæ*)

1. The patient lies on his back with the arm at the side and shrugs the shoulder, bringing it as nearly up to the ear as possible.

(*a*) Without outside help.

(*b*) With resistance from the operator, who pushes down on the point of the shoulder with one hand.

2. The patient sits erect with the arm hanging at the side, and raises the shoulder as high as possible.

(*a*) With the resistance of gravity alone.

(*b*) With the added resistance of the operator's hand pressing down on the point of the shoulder.

Depressors of the Shoulder Girdle

(Subclavius, pectoralis minor, trapezius (lower part), and indirectly latissimus dorsi and pectoralis major)

1. The reverse of exercise 1 for elevators of the shoulder girdle.
2. The patient sits at the edge of the table and by pushing down with both hands lifts his hips and whole body from the table.

NOTE.—Depressors of the shoulder girdle are very important muscles for crutch walking and the use of crutches is often essential to protect weak muscles. (See "Crutch Walking as an Art." American Journal of Surgery, December, 1926, new issue, vol. 1, No. 6, pp. 372–374.)

Abductors of the Upper Arm

(Deltoid, supraspinatus, and possibly the long head of biceps brachii)

plus

The muscles which turn the Scapula so that the Glenoid Fossa points upward

(Trapezius and lower fibers of serratus anterior—old name *serratus magnus)*

1. The patient lies on his back with the arm at the side and moves it sidewise upward along the table until it is stretched above his head.
(*a*) With assistance under the elbow.
(*b*) Without outside help.
(*c*) With resistance above the elbow.
2. The patient sits erect with the arm at the side and raises it straight sidewise until it is stretched vertically above his head.
(*a*) With the resistance of the weight of the arm.
(*b*) With the added resistance of the operator's hand pushing down just above the elbow.

If it is desired to exclude movement of the scapula in the preceding exercises, the operator must hold the shoulder girdle down firmly with one hand, and the patient must allow his elbow to flex and forearm to drag along the table as he brings the elbow out only to shoulder height.

Any loss of power in the deltoid is apt to be more permanent than loss of power in other muscles, so that its training is often very discouraging.

Adductors of the Upper Arm

(Pectoralis major, latissimus dorsi, and coraco-brachialis)

plus

The muscles which turn the Scapula so that the Glenoid Fossa points downward

(Rhomboideus major and minor, and pectoralis minor)

1. The patient lies on his back with the arm stretched above his head, and moves it sidewise downward along the table until it touches the side.
(*a*) With assistance above the elbow.
(*b*) With the resistance of the friction of the table.
(*c*) With the resistance of the operator's hand below the elbow.
2. The patient sits with the arm stretched vertically above the head and brings the arm sidewise downward to the body, while the operator gives resistance on the under side of the arm just above the elbow.

This exercise may be used either for weak or strong adductors, according to the resistance given.

The Muscles which Move the Upper Arm Forward From a Position Parallel with the Trunk

(Pectoralis major (upper part), deltoid (anterior part), coraco-brachialis, and short head of biceps brachii)

plus

The muscles which turn the Scapula so that the Glenoid Fossa points upward

(*Trapezius and lower fiber of serratus anterior*—old name *serratus magnus*)

1. The patient lies prone with his affected arm hanging over the side of the table. The operator lifts the arm backward to a position parallel with the body and above the level of the table and resists as the patient tries to bring it down and forward. From the position of hanging straight down the arm is advanced forward upward to the head against gravity, and during this part of the movement weak muscles may require some help instead of resistance.

2. The patient sits erect with the arm at the side and raises it straight forward upward until it is stretched vertically above his head.

(*a*) With the resistance of the weight of the arm.

(*b*) With the added resistance of the operator's hand pushing on the front of the elbow.

To exclude movement of the scapula, the shoulder girdle must be held firmly down, and the arm will only be raised to shoulder level.

The Muscles which Move the Upper Arm Backward in a Plane Perpendicular to the Line of the Shoulders

(Latissimus dorsi, teres major, deltoid (posterior part), and triceps brachii)

plus

The muscles which turn the Scapula so that the Glenoid Fossa points downward

(Rhomboideus major and minor, and pectoralis minor)

1. The patient lies on his back at the edge of the table with the arm stretched above his head or else (if scapular movement is to be excluded) vertically upward. He brings it forward (if stretched above his head) and downward to or slightly beyond the table level while the operator gives what resistance can be taken on the back of the elbow. If the starting position is above the hand, gravity has to be overcome as far as the vertical and some assistance may be necessary.

2. The patient lies prone with the arm hanging over the edge of the table and lifts it backwards behind him as far as possible.

(*a*) With the resistance of gravity.

(*b*) With resistance on the back of the elbow.

Outward Rotators of the Upper Arm

(Infraspinatus, teres minor, and deltoid (posterior part))

1. The patient lies prone with his arm hanging straight down over the edge of the table and turns the whole arm outward from the shoulder. Gravity is eliminated and the only resistance to be overcome by the outward rotators is the joint friction.

The elbow must be watched to see that it really turns, as turning of the hand may mean action of the forearm muscles only.

2. The patient lies prone with his arm projecting beyond the edge of the table, the upper arm supported by the operator at right angles to the body and hori-

zontal, the lower arm hanging down from the elbow, which is bent to a right angle. The patient raises his hand and forearm, rotating his upper arm outward.
(*a*) With the assistance of gravity.
(*b*) With resistance on the forearm.

Inward Rotators of the Upper Arm

(*Latissimus dorsi, pectoralis major, subscapularis, teres major, and deltoid (anterior part)*)

The exercises are the same as those described for the outward rotators, only given in the reverse direction.

Flexors of the Forearm on the Upper Arm

(*Biceps brachii, brachialis*—old name *brachialis anticus*—*brachio-radialis*—old name *supinator longus*—*pronator teres*—old name *pronator radii teres*—*flexor carpi radialis, flexor carpi ulnaris, palmaris longus, and flexor digitorum sublimis*)

1. The patient sits with the inner side of the whole arm resting on the table, and bends the elbow by sliding the forearm along the surface of the table.
(*a*) With assistance on the back of the wrist.
(*b*) By unaided contraction of the muscles.
(*c*) With resistance on the front of the wrist.
Care must be taken that the patient does not perform the movement by creeping with the fingers on the table.
2. The patient sits with the elbow resting on a cushion and raises the forearm until the hand touches the shoulder.
(*a*) With the resistance of gravity alone.
(*b*) With added resistance on the front of the wrist.

Extensors of the Forearm on the Upper Arm

(*Triceps brachii, anconaeus, extensor carpi ulnaris, and extensor digitorum communis*)

The positions for the exercises are the same as for the flexors of the forarm and the exercises themselves are exactly the reverse.

Outward Rotators of the Forearm

(*Biceps brachii and supinator*—old name *supinator brevis*)

1. The patient lies prone and lets the forearm hang over the edge of the table, the upper arm being supported on the table. He turns the hand and forearm outward, i. e., supinates it.
a. With help.
b. Unaided.
c. With resistance.

Inward Rotators of the Forearm

(*Pronator teres*—old name *pronator radii teres*—*pronator quadratus, and flexor carpi radialis*)

The exercises for pronation are exactly the reverse of those for the outward rotation (supination) of the forearm.

The Muscles Which Move the Hand and Fingers

The most important of these muscles are situated in the forearm; a few of the short muscles, which move the fingers, are in the hand.

The exercises should be given with resistance whenever the muscles are capable of overcoming it. It has not been thought necessary to describe them in detail,

as most of the paralyses of these muscles are of infrequent occurrence and the exercises needed are self-evident, following the principles used in the preceding sections. The following list includes all the movements of which the hand and fingers are capable:

1. Flexion of the wrist.
2. Extension of the wrist.
3. Movement of the wrist toward the thumb side.
4. Movement of the wrist toward the little finger side.
5. Flexion of the fingers and thumb.
6. Extension of the fingers and thumb.
7. Abduction of the fingers and thumb.
8. Adduction of the fingers and thumb.
9. Opposition of the thumb to the fingers.

CLONORCHIASIS INVESTIGATIONS

A SUMMARY OF SURVEYS AND EXPERIMENTS TO DETERMINE WHETHER CLONORCHIASIS MAY BE DISSEMINATED ON THE PACIFIC SLOPE OF THE UNITED STATES

By N. E. Wayson, *Surgeon, United States Public Health Service*

The investigations of which the following is a summary were undertaken to determine, if possible, whether there was danger of the spread of infestation with the liver fluke *Clonorchis sinensis* in United States environments. It was known that many persons thus infected had reached the western coast from the Orient, and they seemed to offer a potential menace. While these experiments fail to adduce evidence of the actual transfer of this infestation within the United States, they do not positively remove this possibility from consideration.

The investigations were pursued along two main lines. These might be considered as epidemiological observations and experimental studies. First, examinations were made to learn whether the disease had already become widespread in natives or in susceptible animals. Then surveys and collections were made of the indigenous molluscan and fish hosts in order to find out whether suitable hosts prevailed in the fresh waters of the Pacific slope; and observations were made of the sanitary practices in communities containing large numbers of alien orientals to learn of the potential contamination of the fresh water by sewage containing the ova.

The results of this phase of the work have been published by the American Society of Tropical Medicine [1] and by the Surgeon General of the United States Public Health Service.[2] No infection was found in native Americans nor in other residents who had never visited foreign endemic districts. Nor was infection found among

[1] Am. Jour. Trop. Med., III, 6, Nov., 1923.

[2] Annual reports of the Surgeon General of the Public Health Service of the United States, 1923 to 1926, inclusive.

the native susceptible lower animals, such as dogs, cats, rats, and hogs.

Indigenous snails and fish were found which were closely allied to those suspected as hosts in the waters of the foreign endemic areas. Also, there were methods of the disposal of sewage in practice which might serve to pollute the fresh waters from which fish were caught for consumption.

The second line of endeavor was the effort to accomplish the life cycle of the parasite in the laboratory. Most of the laboratory or experimental procedures were developed upon the hypothesis that the parasite reproduces in a manner similar to that observed with analogous flukes which are parasitic to mammals. The application of this method of reproduction to clonorchis involves the development, within the egg, of a larval form, which, upon maturation, emerges as a freely swimming animal of microscopic size, a miracidium. The miracidium seeks a snail host into which it enters for encystment and development into secondary larval forms. When these have reached maturity they are liberated as free swimming animals of larger size than the miracidia, and exhibiting some of the morphology characteristic of the adult worm, but differing, particularly, in having distinct organs of locomotion. These secondary larval forms are cercariæ. The cercariæ are presumed again to seek a host, a fish, under the scales of which they penetrate the flesh, encyst, and develop into the larval form of the adult worm. Maturation to the adult worm takes place when the uncooked flesh of the fish containing the encysted larval worms is ingested by a mammal, in the lumen of whose alimentary tract they are liberated and from which they can crawl into those portions of the tract affording conditions most favorable for their existence and for ovulation.

The only phase of the life cycle of *Clonorchis* which has been available for experimental study has been the ovum. This was obtained in specimens of feces, collected at the Angel Island Immigration Station, San Francisco Bay, from oriental immigrants who were infested. Efforts have been concentrated, therefore, toward establishing the conditions which would affect the hatching of the egg. To effect this, attempts have been made to provide an experimental environment which approximates, as closely as can be determined, that which prevails in nature where the parasite abounds. The suspected snail hosts have been imported from the districts of prevalence of the parasite. These have been maintained for continuous periods of at least six months in close proximity to the ova of the parasite, in balanced aquaria and with fish hosts analogous to those in which the encysted larvæ have been observed. Snails which abound in the waters of the Pacific slope have been similarly maintained and grown in these aquaria. These snails included large

numbers of those of the same families and of species allied to those imported. The acquarial conditions have been repeatedly adjusted to favor the life of the hosts, since these do not thrive, or survive long, under most of the artificial surroundings thus far created.

In addition to these attempts to reproduce the life cycle under conditions which may prevail in nature, many experiments have been conducted toward learning the optimum range of factors which favor the hatching of the eggs. These studies were made by varying single and combined physical, chemical, and mechanical factors in preparations which permitted of microscopical observation of many thousand eggs. The probable time required for hatching has also been considered in the experiments combining the variations in temperature, light, aerobiosis, and some chemical reactions of the medium. Under conditions which approximate those found in nature, eggs have been kept as long as from a month to two years.

Temperature.—The effects of temperature have been studied in still, running, and balanced aquaria, and in watch-crystal preparations. The range of temperature exposures has been from 0° to 35° C.

Running aquaria, out of doors, afforded a range of from 16° C. (8 o'clock morning temperature) to 22° C. (5 o'clock afternoon temperature) during the summer months; and from 9° to 15° C. and from 13° to 19° C. at corresponding hours during the winter months.

Balanced aquaria within doors afforded corresponding morning temperatures of 16° to 18° C. during the summer months and of 12° to 15° C. during the winter months; and afternoon temperatures of 18° to 23° C. during the summer months and of 18° to 21° C. during the winter months.

Temperatures of 28° to 30° C. were reached for a few hours on many afternoons in special indoor aquaria receiving long hours of sunlight during the months of August and September, though the morning temperature was 16° to 18° C. By insulation and artificial heat similar aquaria reached temperatures of 32° to 35° C. for periods of one to two hours during the day, and fell to 20° to 22° C. by the following morning.

All the eggs exposed to temperature variations in aquaria were periodically observed for three months, and those exposed to some of the variations for from eight months to two years. Two or more repetitions were made of the exposures under most of the environmental changes in the aquaria.

Watch-crystal preparations of eggs washed free from putrescible material have been exposed to the temperatures prevailing in the indoor aquaria and to other ranges.

Preparations were exposed to 0° C. for a few hours and gradually thawed. Exposures were made to ice-box temperatures of 6° to 10° C. for from one to nine months, followed by exposure to room temperature for several weeks. Constant exposures were made at 25° C. for six months in an incubator, both in darkness and in indirect light. Exposures were made under similar light conditions in an incubator brought daily to a temperature of 30° C. and allowed to fall to 20° C. during the succeeding 24 hours, through a period of 5 months. Several repetitions have been made of daily exposures for 10 days to 3 weeks in a running warm bath of from 24° to 30° C. for several hours, the temperature of the bath falling to that of the room during the evening and night hours. During these exposures in the warm bath continuous observations were made for several hours at a time.

A small percentage of eggs was found open and empty after being subjected to any of these procedures. However, only in those preparations in the running warm bath has spontaneous hatching with complete emergence of motile miracidia been actually seen, on two occasions. Most eggs remain apparently intact after months of storage at the temperatures indicated. The miracidia may be dead in these, but they do not disintegrate, since ciliated specimens can be expressed from the egg mechanically and by sudden chemicophysical changes in the medium.

Light.—The temperature exposures have been carried out in combination with varying conditions of light. Direct sunlight out of doors, indirect sunlight through a window, diffuse light near a window, and absence of light have each been tried in experiments continuing different temperatures, for prolonged periods. The light exposures have been made both in aquaria and in watch-glass preparations.

Reaction.—The media in which the temperature and light exposures were made have been varied in reaction to approximate the acid, neutral, and alkaline waters which may be found in nature and in the irrigation waters of agriculture. Distilled water, rain water, and tap water have been used, and greater ranges of acidity or alkalinity have been provided through the addition of mineral and organic acids or their salts, and of the hydroxides, carbonates, or bicarbonates of calcium, sodium, potassium, magnesium, and ammonium.

Those reactions which might prevail in waters under natural conditions were apparently without effect on hatching. However, the rapid change of reaction from an alkaline to acid medium generally produced dehiscence of many eggs, some with complete or with partial emergence of a "still" embryo. No motile embryos have been observed when obtained by this method. However, the miracidium

has often been found some distance from the egg, probably carried by currents or propelled in its expulsion from the egg. The most constantly effective reagent found in this method of opening the eggs was limewater, followed by overneutralization with dilute acetic acid.

Aerobiosis.—The experiments with temperature and light have also been made with different degrees of aerobiosis. This has been accomplished by the exposures in still, balanced, and running aquaria with water from 2 to 6 inches in depth, and in special still aquaria, with a depth of water as great as 30 inches. Preparations have also been made in narrow cylinders, both under septic and nonseptic conditions. Good oxygenation has been accomplished in watch-glass or stender jar preparations, and some limitation of oxygenation has been obtained by preparations under paraffin oil in stender jars. The oxygen saturation in the watch-crystal preparations was kept at a high degree by an automatic device which rocked the preparations about every 30 minutes for periods of from 2 weeks to 5 weeks. No constant or definite effect of these variations in oxygenation has been noted.

Chemico-physical agents.—Since the miracidium is very small and probably runs great hazards of destruction under natural conditions, it was thought that some chemotactic factor contributed by the snail might influence hatching. Hence, eggs were suspended in the washings of large numbers of dead snails, suspected of being hosts of the parasite in the Orient. Similar preparations were made in suspensions of these snails ground in water while alive, or in suspensions of the teased and macerated digestive glands of such snails. Preparations were also made in dilute formic acid, dilute sodium formate, and dilute uric acid and urates. Also, large numbers of eggs were suspended in watch crystals in which a few of these snails were held for from 12 to 24 hours, to detect any effect such proximity might have on hatching. None of these conditions seemed to have any effect on the hatching of the eggs.

However, during the periods that the snails were in such close proximity to large numbers of eggs, they ingested many of them. The snail droppings and intestinal contents, when washed clean and teased, were found to contain many eggs, both open and closed. Among some specimens as high as 500 eggs were counted in two droppings, of which as many as 43 per cent were open, or open and empty. Among 200 of the eggs remaining apparently uningested in the crystal, 7 per cent were open. One per cent were open among 200 counted in a crystal prepared and simply held under similar conditions without the presence of snails. The finding of open and closed eggs in the droppings and intestinal contents of both the oriental and indigenous snails in acquaria has also been frequent. Such

observations have been made on specimens of *Lymnia*, *Physa*, *Planorbis*, and *Goniobosis*, as well as on the imported *Bythinia striatula* and *Melania japonica*.

The explanation of this finding has been thought to be due to either mechanical or chemophysical interference with the egg in its passage from the water of the aquarium through the alimentary tract of the snail.

The dehiscence caused by abrupt changes in chemical reaction has been cited above. An opening of eggs with emergence of the "still" embryos has likewise been obtained by abrupt changes in the concentration of the suspending menstruum. This has been accomplished by allowing eggs to dry and immersing them again in the medium in which they were previously suspended. Also, almost uniformly, an opening of many has resulted from their suspension in different concentrations of glycerine, or sugar, followed by a rapid dilution with distilled water.

The effect of mechanical pressure on the egg has been repeatedly demonstrated by tapping on the coverslip of a microscopic slide preparation. The caps of eggs trapped under the coverslip spring off, and the embryo emerges in part or completely. Both the cap and the embryo are frequently carried some distance from the egg by the propelling tap and by the currents created in the suspending medium. No definite active motility has been observed in miracidia thus obtained. The tapping frequently springs the cap, and either the tapping or rolling of the egg presents an appearance of a partial emergence and recession of the miracidium. Dehiscence was also obtained, as previously reported, by suspending the eggs with fine sand in a soft rubber tube and gently rolling the tube between the fingers.

RESULTS

Following is a summary of the experimental observations:

Among a hundred or more imported and indigenous snails kept under aquarial conditions for from three months to a year, and subsequently examined by teasing them, no rediæ or cercariæ suspected to be those of *Clonorchis* have been found. The snails have been accessible to the miracidia, if they have hatched spontaneously, as has been shown by finding both open and closed eggs in their droppings and in their intestinal contents, as well as by the recovery of similar eggs from the sludge of the aquaria.

None of approximately 50 fish taken from the aquaria and examined under a dissecting microscope have shown any cysts; nor have three experiments been successful in which guinea pigs were fed with the teased flesh of several of such fish. The varieties of fish used included some in which the cysts are formed when in the district in which the disease is endemic.

What was apparently spontaneous hatching of motile miracidia has been observed among a very few eggs on two occasions. In many repetitions, under seemingly like conditions, on a warm stage at 24° to 26° C., in boiled tap water, such hatching was not again seen, though many eggs were found open, both empty and with the embryo partially emerged.

Dehiscence with partial or complete emergence of "still" miracidia has been frequently obtained by sudden changes of reaction, or of concentration of the medium in which the eggs are suspended, or by mechanical pressure on them.

Many open as well as closed eggs have been observed in the droppings and intestinal contents of snails kept in controlled contact with the eggs, and under aquarial conditions.

DISCUSSION

No definite conclusions have been reached, from these experimental investigations, as to the manner of development of *Clonorchis sinensis* or as to the probability of its dissemination on the Pacific slope. The repeated failure to obtain consistent spontaneous hatching of the eggs, and their ready opening under mechanical and chemical influences, together with the frequent findings described within the alimentary tract of the snail, suggest that the natural emergence of the miracidium may take place within the snail.

The snail *Vivipara vivipara* has been imported from the Orient in commerce and is flourishing in natural fresh-water lakes about San Francisco. It seems pertinent to state, therefore, that the suspected molluscan hosts of *Clonorchis* in the Orient, *Bythinia striatula,* and *Melania japonica* have been successfully imported, reared, and reproduced under aquarial conditions which approximated natural conditions on the Pacific slope.

It has been previously indicated that species of fish, similar to those found infested in the Orient, prevail in the fresh waters of the Pacific slope.

The spread of clonorchiasis in the United States would therefore appear to be possible only under the following combined conditions:

(1) Egg-bearing feces must reach natural waters in sufficient concentration to infect snails.

(2) Such feces must there reach either (*a*) oriental species of snails or fish not yet known to have been established in nature in this country, or (*b*) native species not yet known to be susceptible, but possibly adaptable.

(3) Infected fish must be eaten in a raw state or in an insufficiently cooked or cured condition not affecting the viability of the parasite.

MORTALITY FROM AUTOMOBILE ACCIDENTS, 1922–1926

The Department of Commerce announces that in the registration area in continental United States there were 18,871 accidental deaths in 1926 charged to automobiles and other motor vehicles (excluding motorcycles), and that the death rate from this cause was 17.9 per 100,000 population against 17 in 1925, 15.7 in 1924, 14.9 in 1923, and 12.5 in 1922.

It should be noted, however, that the deaths assigned to automobile accidents do not include those due to collisions of automobiles with street cars and with railroad trains. Therefore, as in 1926 there were 464 deaths due to collisions of automobiles with street cars and 1,556 due to collisions with railroad trains, these deaths if added to 18,871 assigned to automobile accidents would make for the registration area a grand total of 20,891 deaths due to accidents in which automobiles were involved and would raise the rate from 17.9 to 19.9 per 100,000 population.

As in 1926 the registration area included only 89.8 per cent of the total population of the United States, by assuming that the number of deaths from automobile accidents reported in the registration area comprises 89.8 per cent of the number of deaths from automobile accidents in the entire United States, it may be estimated that the total number of deaths in that year due to accidents in which automobiles were involved was approximately 23,264.

In the 36 States for which data are available for the five-year period 1922 to 1926, the number of these deaths as shown in the attached table, increased from 11,187 in 1922 to 17,321 in 1926, and the corresponding rates were 12.6 and 18.2.

In the 67 cities for which similar data are available, the number of deaths increased from 4,891 in 1922 to 6,669 in 1926, and the rate increased from 17.2 to 21.7.

As has been frequently pointed out, uncorrected figures of deaths from automobile accidents, especially in cities, may be very misleading, because fatal accidents frequently occur outside city limits, though the injured are hurried to the city hospital and so increase the city death rate. The second column in the table shows how many such deaths are known to have occurred in the year 1926, though for many of the cities these figures should undoubtedly be much larger, for the place of the accident is not always reported on the death certificate. How important this factor may be, however, is well illustrated by the figures for Camden and Trenton, N. J., and Wilmington, Del., which show that more than half of the deaths were due to accidents which occurred outside of the city.

Deaths and death rates in the registration area in continental United States, registration States, and 68 cities, from accidents caused by automobiles, motor trucks, and commercial motor vehicles: 1922 to 1926

[For each year total deaths are shown regardless of place of accident. For 1926 deaths are also shownw here accidents are known to have occurred outside of State or city limits]

Area	Number of deaths						Rate per 100,000 population				
	1927		Total								
	Total	From accidents outside*	1925	1924	1923	1922	1926	1925	1924	1923	1922
Registration area	18,871	-------	17,571	15,528	14,411	11,666	17.9	17.0	15.7	14.9	12.5
Registration States [1]	18,419	-------	17,149	15,221	14,157	11,466	17.8	16.9	15.6	14.8	12.5
Alabama	319	-------	252	(2)	(2)	(2)	12.6	10.1	(2)	(2)	(2)
Arizona	116	4	(2)	(2)	(2)	(2)	26 1	(2)	(2)	(2)	(2)
California	1,464	2	1,327	1,254	1,239	960	33 9	31.7	32.0	32.6	26.0
Colorado	175	2	146	158	157	159	16 5	14 0	15.7	15 9	16.3
Connecticut	307	4	340	277	249	216	19 1	21.6	18.4	16.9	14.9
Delaware	50	2	37	46	55	24	20 8	15.5	19.8	23.9	10.5
Florida	515	3	449	242	170	122	39 1	35.5	19.7	16.2	11 9
Georgia	(3)	(3)	(3)	307	259	215	(3)	(3)	10.1	8.6	7.8
Idaho	77	1	56	54	51	21	14.8	11.0	11.2	10.8	4.6
Illinois	1,338	13	1,268	1,065	1,031	1,003	18 6	17.9	15.5	15.2	15.0
Indiana	547	6	509	480	433	306	17 5	16.4	15.8	14.4	10.2
Iowa	264	6	271	211	242	(2)	10.9	11.2	8.7	9.8	(2)
Kansas	241	4	240	169	217	175	13 2	13.2	9.4	12.1	9.8
Kentucky	277	4	237	197	166	128	11 0	9.4	8.0	6.7	5.2
Lousiana	271	2	241	210	158	104	14.1	12 7	11.3	8.5	5.7
Maine	100	1	98	91	91	79	12 7	12.5	11 7	11.7	10.2
Maryland	312	4	271	246	243	224	19 7	17.4	16.2	16.1	15.0
Massachusetts	682	7	729	685	611	496	16.2	17.6	16.7	15.2	12 5
Michigan	1,112	3	955	863	738	574	25.3	22.3	21.2	18.6	14 8
Minnesota	326	7	361	366	328	260	12.3	13.8	14.5	13.1	10.3
Mississippi	215	4	170	125	78	60	12 0	9.5	7 0	4.4	3.4
Missouri	493	10	509	449	398	321	14.1	14.6	13.0	11.6	9.4
Montana	93	2	84	69	40	48	13 4	12.5	11.0	8.0	8.1
Nebraska	154	5	125	113	123	131	11 1	9.1	8.4	9.2	9.9
New Hampshire	68	6	87	61	59	49	15.0	19 2	13.6	13.2	11.0
New Jersey	792	9	771	746	672	543	21 5	21.4	21.7	19.9	16.4
New York	2,178	8	2,111	1,985	1,930	1,788	19.3	18.9	18.0	17.8	16.7
North Carolina	453	2	376	328	258	169	15.9	13.4	12.0	9.6	6.4
North Dakota	70	3	59	45	(2)	(2)	10 9	9.2	7.0	(2)	(2)
Ohio	1,317	13	1,285	1,024	1,078	818	20.0	19 9	16.5	17.6	13.6
Oregon	187	1	144	144	120	113	21 3	16.7	17.3	14.6	13.9
Pennsylvania	1,734	23	1,576	1,535	1,592	1,200	18.0	16.6	16.7	17.5	14.0
Rhode Island	127	11	133	113	97	93	18.3	19.6	16.9	15 5	15.0
South Carolina	192	-------	179	167	119	76	10.5	9.9	9.5	6 8	4.4
Tennessee	312	11	278	232	171	160	12.6	11.4	9.6	7.1	6.7
Utah	80	1	89	81	60	59	15 6	17.7	16.7	12.6	12 6
Vermont	45	-------	56	48	46	39	12.8	15.9	13.6	13.1	11.1
Virginia	303	6	271	240	200	137	12 0	10.9	9.9	8.3	5.8
Washington	342	3	299	265	240	173	22.2	19 8	18.2	16.7	12.3
West Virginia	231	15	208	(2)	(2)	(2)	13.8	12 7	(2)	(2)	(2)
Wisconsin	384	3	397	363	292	271	13 3	13.9	13.1	10.7	10.0
Wyoming	56	1	67	59	51	28	23.7	29.3	27.2	24.1	13.5
Total, 67 cities †	6,669	1,013	6,390	5,869	5,599	4,891	21,7	21.2	19.8	19.1	17.2
Akron	62	13	60	39	40	25	(4)	(4)	(4)	(4)	12.0
Albany	41	17	35	28	27	21	34 5	29.7	23.9	23.0	18.1
Atlanta	68	17	65	53	55	54	(4)	(4)	(4)	24.7	24.7
Baltimore	178	42	158	129	131	130	22 0	19 8	16.4	16.9	17.1
Birmingham	57	25	51	55	49	31	27.1	24.8	27.4	25.0	16.2
Boston	149	19	154	143	133	129	18.9	19.8	18.4	17.3	16.9
Bridgeport	31	10	26	21	23	28	(4)	(4)	(4)	(4)	19.5
Buffalo	135	23	119	112	137	106	24.8	22 1	21.0	25.5	20 1
Cambridge	19	4	22	27	28	16	15 6	18.4	22 8	25.1	14.4
Camden	59	34	43	36	44	34	45 1	33 3	28 5	35.4	27 9
Chicago	693	20	645	560	589	623	22 7	21.5	19 0	20 4	22.0
Cincinnati	109	8	115	85	102	76	26 5	28.1	20 8	25.1	18.8
Cleveland	265	11	231	220	203	142	27.6	24 7	24 1	22 8	16.6
Columbus	70	14	71	59	58	37	24.5.	25.4	22.0	22.2	14.5

[1] Including District of Columbia.
[2] Not added to the registration area until a later date
[3] State registration law declared unconstitutional, State excluded from area in 1925.
[4] Population not estimated.
* As the place of accident was not always reported, the figures given as outside State or city limits are doubtless too small in some cases. Therefore, the figures in second column must be regarded merely as minimum numbers.
† Des Moines figures not included as data are not available for the 5 years.

Deaths and death rates in the registration area in continental United States, registration States, and 68 cities, from accidents caused by automobiles, motor trucks, and commercial motor vehicles: 1922 to 1926—Continued

Area	Number of deaths						Rate per 100,000 population				
	1927		Total				1926	1925	1924	1923	1922
	Total	From accidents outside	1925	1924	1923	1922					
Dallas	61	13	59	36	34	27	30.1	30.4	19.2	18.7	15.7
Dayton	52	13	44	26	27	27	29.4	25.4	15.4	16.3	16.7
Denver	48	11	37	40	45	56	16.8	13.2	14.5	16.5	20.9
Des Moines	30	5	23	17	18	(2)	20.6	16.3	12.1	12.8	(2)
Detroit	399	41	346	305	252	176	30.9	27.8	25.5	(4)	17.7
Fall River	19	7	17	16	22	13	14.5	13.2	12.5	18.2	10.8
Fort Worth	30	6	32	27	9	16	18.8	20.6	18.2	6.3	13.2
Grand Rapids	32	9	45	31	27	23	20.5	29.2	20.9	18.5	16.0
Hartford	46	19	53	33	40	31	28.0	33.1	21.1	20.3	22.5
Houston	40	7	31	31	25	27	(4)	(4)	19.4	16.1	18.0
Indianapolis	83	15	78	71	53	47	22.6	21.7	20.2	15.5	14.0
Jersey City	41	7	64	56	37	36	12.9	20.3	17.9	12.0	11.8
Kansas City, Kans	8	3	27	18	12	18	6.8	23.3	15.6	10.4	15.8
Kansas City, Mo	82	9	87	87	86	63	21.8	23.7	24.2	24.4	18.3
Los Angeles	286	74	258	267	224	187	(4)	(4)	(4)	(4)	29.5
Louisville	64	15	64	58	66	42	20.6	21.2	19.8	25.6	16.4
Lowell	22	6	26	23	18	6	19.9	23.6	20.8	15.6	5.2
Memphis	57	28	52	40	46	42	32.3	29.7	23.2	27.0	25.0
Milwaukee	101	10	102	83	62	65	19.5	20.0	16.8	12.8	13.6
Minneapolis	69	16	76	86	60	71	15.9	17.9	20.6	14.7	17.7
Nashville	39	17	38	34	28	20	28.5	27.9	27.5	22.8	16.6
New Bedford	11	2	18	13	8	21	9.2	15.1	10.9	6.2	16.5
New Haven	42	15	40	48	28	33	23.1	22.3	27.3	16.2	19.4
New Orleans	85	23	78	84	68	46	20.3	18.8	20.5	16.8	11.5
New York	1,082	8	1,060	1,000	964	896	18.3	18.0	17.2	16.3	15.3
Bronx Borough	119	(5)	117	122	129	81	13.2	13.4	14.4	15.3	10.0
Brooklyn Borough	338	(5)	341	327	279	266	15.1	15.5	15.1	12.9	12.6
Manhattan Borough	494	(5)	484	439	474	463	26.5	24.9	21.9	20.9	20.4
Queens Borough	102	(5)	102	90	66	68	13.4	14.3	13.4	12.3	13.2
Richmond Borough	29	(5)	16	22	16	18	20.3	11.6	16.3	12.5	14.5
Newark, N. J	109	11	110	104	107	81	23.7	24.3	23.3	24.4	18.8
Norfolk	25	9	24	16	13	11	14.4	14.2	(4)	8.2	8.8
Oakland	51	3	44	49	50	41	19.6	17.3	19.8	20.3	17.6
Omaha	33	9	35	29	40	24	15.3	16.5	13.9	19.6	12.0
Paterson	34	14	41	49	39	34	23.8	28.9	34.8	27.9	24.5
Philadelphia	329	7	296	263	294	267	16.4	15.0	13.5	15.3	14.1
Pittsburgh	163	38	166	186	146	123	25.6	26.3	29.7	23.5	20.2
Portland, Oreg	52	9	42	41	39	40	(4)	(4)	14.7	14.3	14.9
Providence	61	24	79	58	52	51	22.2	29.5	22.0	21.5	21.2
Reading	19	7	19	24	27	13	16.7	16.8	21.5	24.3	11.8
Richmond	37	17	41	33	26	20	19.6	22.0	18.0	14.4	11.2
Rochester	65	12	54	48	44	52	20.3	17.0	15.3	13.8	16.7
St. Louis	172	18	201	197	168	134	20.7	24.5	24.2	20.9	16.9
St. Paul	46	5	42	55	59	36	18.5	17.1	22.5	24.4	15.0
Salt Lake City	33	9	42	34	20	24	24.7	32.1	26.4	15.8	19.4
San Antonio	40	12	30	22	30	28	19.5	19.7	11.5	16.2	15.7
San Francisco	128	27	105	113	107	118	22.6	18.8	20.6	19.9	22.3
Scranton	32	8	33	24	41	29	22.4	23.2	17.0	29.2	20.7
Seattle	69	8	66	53	55	44	(4)	(4)	(4)	(4)	13.9
Spokane	27	5	21	22	15	10	24.8	19.3	21.0	14.3	9.6
Springfield, Mass	38	13	21	27	23	17	26.2	14.8	19.2	15.9	12.1
Syracuse	44	13	29	41	43	36	23.7	15.9	22.7	23.3	19.9
Toledo	74	24	67	46	63	45	25.1	23.3	16.4	23.4	17.3
Trenton	33	17	39	34	36	27	24.6	29.5	26.2	28.3	21.6
Washington, D. C	98	22	88	108	86	64	18.6	17.1	22.2	18.1	14.6
Wilmington, Del	29	17	21	29	29	15	23.3	17.2	24.2	24.6	13.0
Worcester	32	13	40	29	33	26	16.5	21.0	15.3	17.2	13.8
Yonkers	19	------	15	16	17	13	16.3	13.2	14.4	15.8	12.3
Youngstown	42	11	43	39	37	27	25.5	26.9	25.1	24.6	20.4

[2] Not added to the registration area until a later date.
[4] Population not estimated.
[5] Not separately tabulated.

COURT DECISIONS RELATING TO PUBLIC HEALTH

Publication of notices required by sanitary district law.—(Illinois Supreme Court; People ex rel Swanson et al. v. Weinberg et al., 158 N. E. 407; decided October 22, 1927.) A statute relating to the creation of sanitary districts (Smith-Hurd Revised Statutes, 1925, ch. 42, sec. 299) required that notice should be given by the county judge of the time and place where the original commissioners would meet "by a publication inserted in one or more daily or weekly papers published in such proposed district, at least 20 days prior to such meeting." Notice was also required to be given of the election to organize a district "at least 20 days prior thereto by publication in one or more daily or weekly papers published within such proposed sanitary district." It was contended that, inasmuch as the number of publications was not specified, the following provision of law (Smith-Hurd Revised Statutes, 1925, ch. 100, sec. 3) applied:

> Whenever notice is required by law, or order of court, and the number of publications is not specified, it shall be intended that the same be published for three successive weeks.

The supreme court held that only a single publication was required.

Ordinance providing for construction of sewage treatment plant held void.—(Illinois Supreme Court; Village of Lena v. Kable et al., 158 N. E. 409; decided October 22, 1927.) A village passed an ordinance for the construction of a system of sewers and a sewage treatment and disposal plant. One section of the ordinance provided:

> The treatment plant shall consist of a septic tank of the following form, dimensions and specifications, or its equal in efficiency.

Then followed at considerable length the specifications for the construction of the tank, but the alternative to build a tank of equal efficiency was not eliminated. The validity of the ordinance was challenged on the ground that the engineer's estimate and the ordinance left the character, dimensions, and specifications of the sewage treatment and disposal plant to be determined by the contractor. The supreme court held that, in respect of the treatment plant, the ordinance was indefinite and insufficient, and, therefore, void. The court said:

> * * * The treatment plant will be an integral and substantial part of the proposed improvement. There may be many ways in which such plants can be built. The engineer's estimate contemplates, and the provision of the ordinance permits, the substitution of a treatment plant altogether different from the one specified, subject only to the condition of equal efficiency. One plant may be as efficient as another, yet substantial differences between the two in cost and durability may exist. The right of substitution destroys the certainty that the treatment plant will be constructed in the manner and of the materials prescribed by the ordinance. * * *

* * * An ordinance for the construction of a local improvement may make a certain product, substance, or compound the standard of quality and fitness, and require that only material equal to it in all respects shall be used. [Cases cited.] This discretion, however, may only be exercised to permit the substitution of a particular substance or ingredient which meets the standard prescribed, but it is not broad enough to allow the construction of a substantial part of the improvement in a manner and of materials essentially different from the specifications of the ordinance. * * *

Award under workmen's compensation act for death from actinomycosis.—(Wisconsin Supreme Court; Pfister and Vogel Leather Co. *v.* Industrial Commission of Wisconsin et al., 215 N. W. 815; decided November 8, 1927.) The State industrial commission awarded a death benefit under the workmen's compensation act on account of the death of a tannery employee from actinomycosis. The award was affirmed by the circuit court and the plaintiff company appealed. The supreme court affirmed the judgment of the circuit court, saying:

The single question presented is whether there is any credible evidence which directly or by fair inference sustains the findings of the industrial commission. * * *

The proof established the fact that death was caused by an infection of the actinomycosis germ or fungus. It follows that deceased must have been exposed to this germ at some place. The inferences preponderate in favor of the finding that he was exposed to this germ in appellant's tannery. The preponderance of inferences is so great that the commission could say that it amounted to a reasonable certainty.

CASES OF SMALLPOX REPORTED BY STATE HEALTH OFFICERS NOVEMBER 20 TO DECEMBER 10, 1927, AND CORRESPONDING WEEKS OF 1925 AND 1926

The following table is a continuation of the table which appears on page 2953 of the Public Health Reports of December 2, 1927:

Cases of smallpox reported by State health officers November 20–December 10, 1927, compared with reports for the corresponding weeks of 1925 and 1926

State	Week ended—								
	Nov. 26, 1927	Nov. 27, 1926	Nov. 28, 1925	Dec. 3, 1927	Dec. 4, 1926	Dec. 5, 1925	Dec. 10, 1927	Dec. 11, 1926	Dec. 12, 1925
New England States:									
Maine	0	0	0	0	0	0	0	0	0
Vermont	0	0	0	0	0	0	0	0	0
Massachusetts	0	0	0	0	0	0	0	0	0
Rhode Island	0	0	0	0	0	0	0	0	0
Connecticut	0	0	0	0	0	0	0	0	0
Middle Atlantic States:									
New York	8	3	1	8	21	0	1	18	0
New Jersey	0	0	0	0	0	0	3	0	0
Pennsylvania	0	0	1	0	0	0	0	0	......
East North Central States.									
Ohio	5	......	......	25	......	......	24	......	......
Indiana	[illegible]	143	94	57	151	34	94	147	23
Illinois	17	3	13	24	15	23	20	9	11
Michigan	12	9	5	41	9	13	29	14	13
Wisconsin	23	5	14	29	8	11	77	2	8
West North Central States									
Minnesota	3	9	1	0	7	0	0	5	5
Iowa	49	3	20	45	15	36	41	8	21
Missouri	88	3	3	47	0	8	26	3	4
North Dakota	14	13	2	7	17	3	......	28	1
South Dakota	2	3	0	11	20	1	21	0	3
Nebraska	5	17	21	10	18	56	56	10	12
Kansas	32	12	6	34	26	4	40	18	4
South Atlantic States:									
Delaware	0	0	0	0	0	0	0	0	0
Maryland	0	0	0	0	0	0	0	0	0
District of Columbia	0	0	0	0	0	0	......	0	0
Virginia	0	0	1	0	0	0	0	0	0
West Virginia	5	1	0	6	2	0	16	11	0
North Carolina	28	42	9	39	72	26	42	37	10
South Carolina	5	15	1	7	6	4	4	1	......
Georgia	0	16	1	0	20	1	0	65	7
Florida	0	14	6	2	28	2	0	24	15
East South Central States									
Tennessee	7	6	......	5	0	5	6	7	0
Alabama	19	7	80	6	11	23	1	77	16
Mississippi	7	6	1	5	4	12	8	9	6
West South Central States									
Arkansas	2	1	2	4	3	4	8	7	2
Louisiana	8	9	23	11	1	7	6	5	8
Oklahoma	36	56	6	41	42	17	54	31	7
Texas	13	1	1	6	2	3	27	12	21
Mountain States:									
Montana	59	3	2	27	16	13	16	0	15
Idaho	8	3	......	9	7	......	0	5	......
Wyoming	10	5	14	5	0	6	10	0	7
Colorado	8	20	1	11	19	1	10	6	1
New Mexico	0	0	0	0	0	1	0	0	0
Arizona	0	0	0	0	0	0	0	0	0
Utah	30	5	2	19	1	0	54	1	1
Pacific States:									
Washington	35	20	65	31	39	76	30	66	82
Oregon	20	15	20	20	18	15	51	41	30
California	5	9	46	10	21	42	2	12	48

PUBLIC HEALTH ENGINEERING ABSTRACTS

What Denver is Doing to Abate Smoke. Charles B. Roth. *The American City*, vol. 37, No. 3, September, 1927, pp. 345–347. (Abstract by Leonard Greenburg.)

The smoke ordinance of the city of Denver, Colo., went into effect in 1917. In 1922 this city stood in thirty-seventh place among the 150 cities inspected by the Government from a point of view of smoke nuisance. Approximately two years ago, a time probably late in 1925, the city began to take active steps to abate the smoke nuisance, and somewhat later in this year (1925), when another smoke test was made by the Government, Denver occupied eighteenth place.

The smoke department of the city and county of Denver is composed of three men, a Mr. Williams, in charge, a chief boiler inspector, and a smoke inspector.

The department keeps a log of each building in the city, showing the results of the inspection of the heating plant and information concerning the type of fuel used and the method of operation of the buildings. This log is supplemented by photographs of the smokestack when it is issuing smoke. In dealing with violation of the smoke ordinance, the first step consists in the forwarding of a letter to the owner of the building, notifying him of the condition, and granting him a reasonable period, usually 30 days, in which to remedy the difficulty. During this interval the Government assists the property owner with suggestions and help for the removal of the nuisance. A second inspection is then made, and if the owner is found to be obstinate he is requested to appear before the smoke commission which meets each week. The owner is then conclusively shown by the log of his particular building just what the conditions are and is given 30 or 60 days in which to comply. Advice is rendered whenever requested during this period. In practically all cases, effort of this type has been successful without recourse to the courts.

During 1925 results of the following general type were obtained: Stokers were installed in 30 plants, 16 plants were equipped with mechanical doors, 6 plants were equipped with patent steam devices, flues were extended, defective flues were repaired, over 1,000 inspections were made, and 50 boilers were reset. During the year 1926 greater progress was made along these same lines.

It has been found by the owners of buildings in the city of Denver that smoke-prevention work is a real paying investment. Some have even commented that it is their wish that they had been forced to take steps earlier. Savings in fuel in one case amounted to $355 a month, and one of the hospitals of the city of Denver reports that they are saving over 20 per cent on fuel.

Studies of the Malaria Problem in Porto Rico. Anon. *Porto Rico Health Review*, vol. 2, No. 12, June, 1927, pp. 25-31. (Abstract by H. A. Johnson.)

This is part of a report of a mosquito and malaria survey of the island carried on by the International Health Board and the Insular Department of Health in 1924 and 1925.

Intensity of Anopheles breeding.—The paper points out that breeding of *albimanus* reached its greatest intensity at the time of high temperature, high rainfall, and low wind velocity. Grabhamii thrived best during the cooler and drier months. Vestitipennis was intermediate between the two but seemed much the more sensitive to heat of the three species and thrived best during period of greatest number of temporary water deposits.

Relation of cane culture to Anopheline breeding.—As a result of the studies the author found that (1) cane field ditches proved to be excellent breeding places; (2) lack of ditch cleaning favored breeding; (3) the effect of high cane and corresponding shade in reducing breeding in the ditches was very apparent. This applied especially to breeding of albimanus.

The seasonal variation of malaria was very difficult to determine, due to complications with grippe, colds, etc., but malaria was present in considerable amount at all times of the year.

Investigation of a Malarial Epidemic in Tegal During the First Months of 1926. E. W. Walch and R. Soesilo. (Meded. Dienst. d. Volksgezondheid in Nederl-Indie. 1927. Pt. 1, pp. 1-96.) From *Tropical Diseases Bulletin*, vol. 24, No. 9, September, 1927, pp. 723-724. (Abstract by Arthur P. Miller.)

"This characteristically thorough report is, in great part, necessarily of local interest only. It deals with parasite index, spleen index, rainfall, mortality, breeding places and house catches of anopheles, their dissection, the relation between them and malaria, and quinine distribution. The investigation was

called for as the result of a malarial epidemic beginning in January, 1926, the investigation being carried out from the middle of March to the middle of April. *A. ludlowi* was implicated as the chief vector—2 per cent infected as against 0.2 per cent for *A. rossii*. The former was found breeding freely in the coastal zone, its breeding places having extended here as compared with a previous investigation; yet the larvae were entirely absent from the town itself, although the imagines were found distributed throughout it. A new fact is recorded in the discovery of *A. fuliginosus* breeding in salt water up to 17 parts per thousand. There is doubt as to the implication of *A. aconita*, which breeds in rice fields and ditches. It is advised that attention be first directed to the breeding places of *A. ludlowi*, and that those of *A. aconita* be attacked only if the measures directed against *A. ludlowi* should fail in reducing the local malaria."

Yellow Fever. Rockefeller Foundation, International Health Board, Thirteenth Annual Report (1926), pp. 142–154. (Abstract by A. L. Dopmeyer.)

Recrudescence of the disease in Brazil.—Yellow fever appeared in epidemic form in four States of Brazil in 1926. Campaigns are carried out on the assumption that if permanent endemic foci of infection are eliminated, the disease will die out in smaller communities for lack of the human host. Antilarva activity in Brazil was therefore concentrated on the larger coast towns, which have been the endemic centers from which the disease has spread.

The fundamental basis of the yellow-fever-control campaign is the fact that endemicity can continue only in the joint presence of a large number of non-immune persons and a large number of the Stegomyia mosquitoes. It was believed that the outbreak of yellow fever in 1926 was caused by the movement of soldiers from southern Brazil to the north. Information gathered indicates that nonimmune soldiers became infected, furnishing presumptive evidence that smoldering infection still existed in the interior of the country, which was augmented and spread by the passage of the troops.

Intensive antilarva work was maintained in all of the larger centers of population and many smaller towns located on well traveled highways, which on account of their location might serve to spread the disease.

Preliminary studies in West Africa.—The West Africa Yellow Fever Commission was organized in 1925 for the purpose of studying the disease with a view to wiping it off the west coast of Africa. There were eight members on the scientific staff of the commission, including a director, a pathologist, an entomologist, a laboratory technician at headquarters, and three medical men and a sanitary inspector in the field. By the end of 1926 there were 10 members on the staff. Surveys were made in southwestern Nigeria, the Niger Delta region the Port Harcourt area in Nigeria and on the Gold Coast. Surveys included collection of data on population; the movement of people; previous histories of yellow fever; the amount of mosquito breeding, particularly *Aëdes ægypti;* studies of types of mosquito breeding places, living habits of the people, etc.

Results of the West African studies.—The results of the studies are inconclusive. *Aëdes ægypti* is present in sufficient numbers to serve as vector. Endemicity of the disease among the native population has not been established. Attempts to isolate the infective organism or to transmit the disease experimentally have been negative and the serological tests only slightly suggestive. Further studies, must be made before inaugurating control measures.

Experience in Destroying Sewage Screenings by Burning. Robert A. Appleton. *Engineering News-Record*, vol. 99, No. 13, September 29, 1927, pp. 500–502. (Abstract by Ella G. White.)

The sewage screening and screenings disposal plant at Long Beach Calif., is located near a popular bathing beach, which necessitated careful designing and requires special operating attention to avoid the creation of a nuisance. Details

of the plant design and operation are given by the author, who was formerly superintendent of the sewage works at Long Beach.

The old plant was remodeled in 1924 and an additional unit built, so as to insure continuous operation on a 24-hour basis. The combustion chamber and the ash pit of the new unit are lined with refractory material, and all walls and roofs insulated with the same. The total cost of the additional unit was $2,500. Gas is used for fuel and a temperature ranging between 1,600 and 1,850° F. is maintained. This temperature was found to be most satisfactory, as higher temperatures produced a clinkerage hard to dispose of. The rate of burning in the old unit was around 10.5 pounds of screenings per minute, but in the new unit a much greater amount is handled at less than half the fuel cost. The screenings removed from Long Beach sewage average 30.7 cubic feet per m. g. but during the canning season (fish and tomatoes), peak loads run as high as 45 cubic feet. The cost of burning the screenings is estimated at 4.025 cents per cubic foot, this to include fuel and labor.

Although the nearest houses are only 75 feet from the incinerator stack, no complaints have been made against the operation of the plant.

Operation of Sewage Works of Pontiac, Mich. James R. Pollock. *Engineering News-Record*, vol. 99, No. 11, September 15, 1927, pp. 434–435. (Abstract by Ella G. White.)

The sewage treatment works at Pontiac, Mich., consist of grit chambers, Imhoff tanks, sprinkling filters, secondary tanks, and sludge drying bed. Revolving filters of the English type are used successfully with a head of only 14 inches, which obviates the necessity of pumping. The plant was designed for a population of 52,000 and with an additional Imhoff unit would serve 68,000. The 60-inch outfall sewer is designed for an ultimate population of 215,000.

Pontiac is an industrial city, and oil from automobile factories and finely shredded hay from the packing houses cause special problems at the sewage disposal plant. An analysis of cost data shows the per capita cost of operation to have been $5.55 for 1925 and $6.00 for 1926. Excessive foaming in the Imhoff tanks in 1926 ran the water cost to $1,259.50 as against $218.10 for the previous year

Sewage Treatment Tank. Bulletin No. 4, Bureau of Engineering, Florida State Board of Health. (Abstract by A. F. Allen.)

This 30-page pamphlet, recently issued, contains a general discussion of household septic tanks; sketches for a rectangular concrete septic tank with one partition wall; dimensions of tanks for schools, apartments, residences, and tourist camps, based upon the number of people served; and also the recently promulgated State board of health regulations for septic tanks and absorption beds. The sketches show a tank having inlet and outlet tee connections, the vertical legs of which are of equal length, and the partition walls pierced by a few small openings at midwater depth. The regulations specify a basis of 50 gallons per person tank capacity, with a minimum of 250 gallons for a tank for residential use, and a minimum length of drain line of 75 feet.

Iodization of Public Water Supplies for Prevention of Endemic Goiter. Robert Olesen. Reprint No. 1158 from *Public Health Reports*, May 20, 1927, pp. 1355–1367. (Abstract by S. D. Collins.)

The theory that goiter is due principally, if not solely, to a relative or absolute deficiency of iodine is now widely accepted. The administration of small amounts of iodine to prevent goiter is also widely accepted as good practice, but not widely practiced for several reasons, the chief of which is disagreement as to the method of distribution or administration of the iodine.

Goiter prevention and goiter treatment must be sharply distinguished. The minute doses of iodine suitable for prophylactic purposes have little, if any, effect

upon existing thyroid enlargements, the sole idea being to maintain the equilibrium of the normal thyroid. Treatment of goiter is a matter for a physician with special skill and experience in the diagnosis of different forms of goiter.

Numerous preparations, combinations, and methods have been proposed for general distribution of prophylactic doses of iodine, but water and salt are the most common vehicles used. Water containing 10 parts of sodium iodide per 1,000,000,000 parts of water is sufficient to prevent goiter, but a region is considered to be amply supplied if the water contains half this amount of iodine.

The objections to the use of iodized water as a means of preventing endemic goiter are summarized, but none are regarded as fundamental: (*a*) The cost is reasonable, being in the neighborhood of 1 cent per capita per year; (*b*) waste due to the large consumption of water for other than drinking purposes is no more applicable than in the case of purification of the whole water supply; (*c*) there appears to be little evidence of any undesirable chemical reaction between iodine and chlorine in the water; (*d*) the taste of the water is not changed; and (*e*) of perhaps greatest importance, the minute quantities of iodine available in iodized drinking water are not considered harmful to any type of goiter.

At present there appear to be only two places in the United States where iodization of drinking water is now practiced—Rochester, N. Y., and Anaconda, Mont. The health authorities of both of these cities claim that goiter is less prevalent than before prophylaxis was inaugurated, but no adequate data are available to prove the result, although there has been some decrease in the number of visible thyroids observed among school children in Rochester. As iodized salt is recommended in Rochester and iodine tablets are used by school children in Anaconda, the alleged reduction could not be attributed definitely to iodized drinking water.

Reexamination of certain groups of children in Derbyshire, England, after a short period of the use of iodized water and iodized tablets revealed an apparent increase in the prevalence of goiter, but the period was too short (about nine months) to afford an accurate appraisal of either method.

The author's conclusions are that there is considerable doubt as to the ability of iodized water to reduce the incidence of endemic goiter, and although this lack of convincing evidence appears to be the result of poorly controlled experiments rather than any inherent defect in the procedure itself, the iodization of public water supplies, in its present state of development, can not be recommended for widespread adoption.

New Methods for Control of Coagulation of Water Supplies. *Profilakticeskaja medicina*, vol. 6, No. 1, 1927, pp. 1–8 (Russian). Translation of abstract by F. Dorbeck in Zentralblatt fur die Gesamte Hygiene, vol. 15, No. 11–12, August 10, 1927, p. 492.

The best method for precipitation of suspended matter of water of the Neva consists in the addition of from 0.04 to 0.06 g. aluminum sulphate to 1 liter water. For proper control of coagulation, the aluminum sulphate must be periodically examined. The content of the pure chemical should be 93 per cent. The mixture of ferrous salts must not be more than 1 per cent, and must not be present at all with traces of arsenic. Following coagulation no coagulating ingredients should remain in the water. The water must be perfectly clear, without opalescence, and must show no precipitate in 6 liters after standing 24 hours.

For examination of the aluminum sulphate, the methods of Atack and of Hatfield are used, preferably the latter, as 0.1 or even 0.01 part per million of metallic aluminum can be detected. These methods may also be used for the determination of aluminum in water that has stood or been cooked in aluminum

vessels, since it was ascertained that one liter of water after standing 10 days in an aluminum cooking vessel contained 0.31 mg. of Al. and after boiling 0.44 mg. of Al. For the qualitative determination of Al. in water the Alizarin method of Atack is useful.

The Disappearance of Typhoid Bacteria in Water. N. L. Wibaut and Isebree Moens. *Verslag d. afdeel. Natuurkunde koninkl. akad. v. Wetensch*, vol. 36, No. 1, 1927, pp. 129–139 (Dutch). Translation of abstract by E. Reichenow in *Zentralblatt fur die Gesamte Hygiene*, vol. 15, No. 11–12, August 10, 1927, p. 486.

For a study of the reasons for the disappearance of typhoid bacilli in water, water samples from different sources were inoculated with typhoid organisms and stored under similar conditions. The types and numbers of protozoa occurring in the water were also observed. The typhoid bacilli disappeared from tap water, rain water, and water from a swimming pool in from 7 to 10 days and their disappearance corresponded with a marked increase of a bacteria-eating protozoa, *Oicomonas termo, Cercobodo alexeieffi, Cyclidium glaucoma.* With ground water the result was less marked. In one of the experiments the bacilli disappeared only after 4 weeks in spite of the presence of the same protozoa, in another they were not present after 13 days, while in water from the same source that had been freed from protozoa by filtration they remained 4 days longer. It is concluded that at present unknown factors other than bacteria-eating protozoa are also responsible for the disappearance of the typhoid organisms.

Irregularities in the Test for B. Coli in Water. Rudolph E. Thompson. *Jour. Bact.*, vol. 13, No. 3, March, 1927, pp. 209–221. (Abstract by C. T. Butterfield).

This paper deals with true positive presumptive tests which fail to confirm. It is believed that failure is due to production of lethal H-ion concentration during preliminary enrichment. Describes preparation of standard lactose broth buffered with dipotassium phosphate. Results of comparative tests made with this medium and the standard, unbuffered, indicate that failures due to a lethal H-ion concentration are largely eliminated. Results are given which show that failure to confirm due to this error is frequently encountered.

A review of the literature dealing with this and other irregularities of the presumptive test is given.

The New Filtration Plant at Ronceverte, W. Va. Anon. *American City*, vol. 37, No. 3, September, 1927, pp. 291–292. (Abstract by D. W. Evans.)

Ronceverte, W. Va., recently completed a modern filtration plant to purify water from Greenbriar River. It is capable of handling a half million gallons per day.

Equipment consists of an intake well, mixing basin, sedimentation basin, two quarter million gallon filters, clear well, duplicate pumping apparatus operated by electric motors and a half million gallon standpipe.

Alum is used for removal of turbidity and at times color. Soda ash is used occasionally when the alkalinity in the raw water gets low. Chlorine is dosed to the clear well.

One innovation here is the small tile-lined basins which receive the water as it passes from the filters to the clear well. Each filter has its own basin and it enables the operator to observe at all times the character of the water passing each filter.

Disinfection of Water Mains. Charles H. Eastwood. *Journal of American Water Works Assn.*, vol. 18, No. 1, July, 1927, pp. 114–116. (Abstract by J. B. Harrington.)

This paper discusses somewhat in detail two methods for disinfecting new water mains. The first is that of introducing a small amount of calcium hypochlorite into each section of pipe as it is laid. The second method is by the use of

liquid chlorine. The section of main to be sterilized is tapped nearest the end at which the water enters and a connection between the auxiliary tank valve on the tank of chlorine and the main is made. Water is then turned into the section to be sterilized at the minimum possible pressure and the chlorine dosage is regulated to get a reaction to the orthotolidin test of an orange red color. In both instances the mains should be flushed after disinfection.

The Fort Pierce Filter Plant. F. P. Larmon. *Journal of American Water Works Assn.*, vol. 18, No. 1, July, 1927, pp. 112–113. (Abstract by J. B. Harrington.)

This is a description of the new Fort Pierce filter plant utilizing as a source of supply a highly colored water. The raw water is pumped into an aerating device consisting of 12-inch pipes having one-half-inch holes drilled in the top. From the aerator the water flows into a collecting basin where it is treated with alum and lime. It then passes through two settling basins and three 1 m. g. d. filters into a ½ m. g. clear well.

Operation figures show that it costs 9.5 cents per thousand gallons to pump and treat the water and 9.4 cents per thousand for distribution, billing, collecting, and supervising. A check up on meters and repairing leaks in lines and services increased the revenue $700 per month.

The Bacteria Found in the Filtered Water in the Case of the Filtration With the Preceding Chlorination. T. Kotoku. *Journal of the Public Health Assn. of Japan*, vol. 3, No. 6, June, 1927, p. 12. (Abstract by Fred Almquist.)

Experiments in the city of Osaka frequently showed higher bacterial scores after filtration on water that was first chlorinated than on water filtered but not chlorinated.

The author says that this was supposed to be due to incomplete formation of slime on the sand when chlorine is used, consequently allowing percolation of bacteria. Species of bacteria in raw water and in chlorinated and filtered water were isolated and found to be of different types. Thus the bacteria in the filtered water after chlorination were a new type growing in the sand layer of the filter.

DEATHS DURING WEEK ENDED DECEMBER 10, 1927

Summary of information received by telegraph from industrial insurance companies for the week ended December 10, 1927, and corresponding week of 1926. (From the Weekly Health Index, December 14, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Dec. 10, 1927	Corresponding week 1926
Policies in force	69, 603, 581	66, 332, 374
Number of death claims	12, 217	12, 486
Death claims per 1,000 policies in force, annual rate	9. 2	9. 8

Deaths from all causes in certain large cities of the United States during the week ended December 10, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, December 14, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Dec. 10, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Dec. 10, 1927 [2]
	Total deaths	Death rate [1]		Week ended Dec. 10, 1927	Corresponding week 1926	
Total (67 cities)	6,823	12.1	[3] 12.8	643	[3] 728	[4] 54
Akron	36			4	4	43
Albany [5]	47	20.4	14.9	1	4	21
Atlanta	73			4	9	
White	38			3	5	
Colored	35	(6)		1	4	
Baltimore [5]	216	13.8	13.9	25	18	79
White	162		13.0	14	10	58
Colored	54	(6)	19.3	11	8	172
Birmingham	64	15.5	12.9	8	4	
White	36		7.3	5	2	
Colored	28	(6)	21.4	3	2	
Boston	215	14.1	15.0	24	31	67
Bridgport	26			5	4	85
Buffalo	122	11.6	11.4	17	12	72
Cambridge	20	8.4	11.1	1	3	18
Camden	26	10.2	13.5	6	5	103
Canton	29	13.4	5.7	3	0	72
Chicago [5]	680	11.4	11.2	54	69	47
Cincinnati	158	20.0	19.3	14	15	85
Cleveland	177	9.4	9.8	21	19	56
Columbus	73	13.1	15.0	8	8	74
Dallas	43	10.7	11.1	5	7	
White	33		8.6	4	5	
Colored	10	(6)	27.3	1	2	
Dayton	40	11.6	10.6	2	4	33
Denver	89	16.0	15.2	10	7	
Des Moines	29	10.1	10.7	1	2	18
Detroit	248	9.7	11.7	30	38	46
Duluth	17	7.7	9.7	0	1	0
El Paso	24	11.0	12.9	2	4	
Erie	22			3	1	64
Fall River [5]	21	8.2	10.3	2	4	34
Flint	31	11.3	11.5	8	4	126
Grand Rapids	38	12.5	14.0	4	6	59
Houston	76			11	4	
White	45			5	4	
Colored	31	(6)		6	0	
Indianapolis	94	13.1	15.2	6	8	46
White	83		15.5	6	8	52
Colored	11	(6)	13.2	0	0	0
Jersey City	62	10.0	11.3	4	6	30
Kansas City, Kans	33	14.7	11.6	3	4	63
White	24		10.8	1	3	25
Colored	9	(6)	15.3	2	1	290
Kansas City, Mo	89	12.1	13.5	6	9	
Knoxville	35	17.9		6		
White	32			6		
Colored	3	(6)		0		
Los Angeles	310			33	22	94
Louisville	70	11.4	15.4	1	4	8
White	55		13.7	1	3	9
Colored	15	(6)	25.3	0	1	0
Lowell	17	8.0	10.4	4	7	85
Lynn	23	11.4	13.5	1	4	28
Memphis	70	20.4	15.6	7	4	
White	41		11.9	3	3	
Colored	29	(6)	22.3	4	1	
Milwaukee	106	10.4	12.2	14	16	64
Minneapolis	76	9.0	11.9	6	10	34

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 66 cities.
[4] Data for 63 cities.
[5] Deaths for week ended Friday, Dec. 9, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

Deaths from all causes in certain large cities of the United States during the week ended December 10, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, December 14, 1927, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended Dec. 10, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Dec. 10, 1927
	Total deaths	Death rate		Week ended Dec. 10, 1927	Corresponding week 1926	
Nashville	50	18.9	16.0	3	5	----------
White	26	----------	10.6	3	3	----------
Colored	24	(6)	29.4	0	2	----------
New Bedford	26	11.3	11.8	2	5	38
New Haven	47	13.2	10.6	5	4	70
New Orleans	160	19.7	14.8	17	11	----------
White	99	----------	11.1	7	6	----------
Colored	61	(6)	25.3	10	5	----------
New York	1,306	11.4	13.1	109	128	46
Bronx Borough	170	9.6	9.7	9	14	29
Brooklyn Borough	462	10.6	11.4	41	39	43
Manhattan Borough	511	14.7	18.1	47	56	56
Queens Borough	130	8.4	8.8	11	16	48
Richmond Borough	33	11.7	17.2	1	3	19
Newark, N. J	98	11.0	12.0	14	13	70
Oakland	64	12.5	12.2	7	9	83
Oklahoma City	38	----------	----------	5	3	----------
Omaha	43	10.2	11.9	4	3	45
Paterson	26	9.4	11.3	3	5	54
Philadelphia	415	10.6	13.5	32	62	43
Pittsburgh	187	15.2	12.1	23	25	80
Portland, Oreg	76	----------	----------	7	6	75
Providence	62	11.5	10.8	5	12	43
Richmond	49	13.3	16.0	6	6	78
White	28	----------	12.1	1	3	20
Colored	21	(6)	25.4	5	3	183
Rochester	70	11.3	15.6	11	9	93
St. Louis	207	12.9	14.9	16	17	----------
St. Paul	64	13.3	11.3	4	5	37
Salt Lake City [5]	37	14.2	13.3	6	6	96
San Antonio	61	15.1	14.0	15	7	----------
San Diego	46	20.9	12.8	2	3	44
San Francisco	159	14.4	14.4	8	7	50
Schenectady	25	14.0	12.9	5	1	150
Seattle	59	----------	----------	3	7	32
Somerville	26	13.3	11.4	1	2	29
Spokane	24	11.5	12.4	1	4	24
Springfield, Mass	30	10.6	7.9	2	3	32
Syracuse	37	9.8	12.4	3	4	39
Tacoma	28	13.6	13.3	2	2	47
Toledo	83	14.2	11.5	10	7	95
Trenton	18	6.9	13.6	0	4	0
Utica	38	19.2	18.8	4	1	93
Washington, D. C	127	12.3	13.4	5	15	29
White	80	----------	11.1	5	12	43
Colored	47	(6)	20.3	0	3	0
Waterbury	17	----------	----------	6	1	140
Wilmington, Del	29	12.0	12.6	0	0	0
Worcester	57	15.2	11.3	9	4	109
Yonkers	18	7.9	4.9	1	0	23
Youngstown	24	7.4	9.5	4	2	53

[5] Deaths for week ended Friday, Dec. 9, 1927.

[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Houston, 25; Indianapolis, 11; Kansas City, Kan., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; and Richmond, 32.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks Ended December 18, 1926, and December 17, 1927

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 18, 1926, and December 17, 1927

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Dec 18, 1926	Week ended Dec 17, 1927	Week ended Dec. 18, 1926	Week ended Dec. 17, 1927	Week ended Dec. 18, 1926	Week ended Dec. 17, 1927	Week ended Dec. 18, 1926	Week ended Dec. 17, 1927
New England States:								
Maine	5	4	3	14	193	35	0	0
Vermont		4			111	3	0	0
Massachusetts	108	116	8	9	88	579	2	2
Rhode Island	8	20		2	1	4	0	0
Connecticut	28	59	17	9	67	43	2	0
Middle Atlantic States:								
New York	299	357	[1] 87	[1] 12	931	337	[1] 6	3
New Jersey	117	172	25	9	30	59	3	0
Pennsylvania	160	188			573	471	1	1
East North Central States:								
Ohio		117		7		74		1
Indiana	67	45	60	26	48	31	0	0
Illinois	115	188	22	28	625	25	3	12
Michigan	143	94		4	114	263	0	1
Wisconsin	36	50	57	64	438	104	3	4
West North Central States.								
Minnesota	33	25	1		151	4	0	1
Iowa [2]	26	12			48	26	0	0
Missouri	71	[4] 43	24	[4] 7	121	[4] 21	1	[4] 3
North Dakota	7				361		0	
South Dakota	1	1		4	61	30	2	2
Nebraska	7	20		4	8	9	4	0
Kansas	13	35	6	7	67	20	2	3
South Atlantic States:								
Delaware	2	4		4		1	0	0
Maryland [2]	58	30	25	24	22	78	1	1
District of Columbia	25		2				0	
West Virginia	55	31	59	14	75	34	0	1
North Carolina	79	84			91	1,344	0	0
South Carolina	33	49	544	670	3	473	0	0
Georgia	31	33	61	154	21	51	0	0
Florida	42	19	1	11	9	8	0	1
East South Central States:								
Kentucky		14				34		0
Tennessee	24	37	55	65	26	217	0	0
Alabama	49	69	49	130	8	142	2	0
Mississippi	22	33						
West South Central States.								
Arkansas	13	16	87	81	2	27	0	0
Louisiana	25	23	13	15		15	0	1
Oklahoma [3]	24	75	106	104	35	79	2	3
Texas	45	75	209	92		18	0	2
Mountain States:								
Montana	7				265	1	0	0
Idaho	1	1			35		2	0
Wyoming	6	1			28	9	0	5
Colorado	21	26	2		28	28	1	2
New Mexico	7	8			21	16	0	0
Arizona	7	23			16	1	1	4
Utah [2]	5	10			303		0	0
Pacific States:								
Washington	33	11			117	132	1	1
Oregon	35	18	22	24	41	23	1	2
California	163	147	25	25	824	46	1	2

[1] New York City only. [2] Week ended Friday. [3] Exclusive of Tulsa. [4] Exclusive of Kansas City.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 18, 1926, and December 17, 1927—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Dec. 18, 1926	Week ended Dec. 17, 1927	Week ended Dec. 18, 1926	Week ended Dec. 17, 1927	Week ended Dec. 18, 1926	Week ended Dec. 17, 1927	Week ended Dec. 18, 1926	Week ended Dec. 17, 1927
New England States:								
Maine	0	2	47	51	0	0	3	2
Vermont	0	0	15	5	0	0	1	0
Massachusetts	4	11	327	310	0	0	35	2
Rhode Island	0	1	13	35	0	0	0	0
Connecticut	1	2	77	70	0	0	1	1
Middle Atlantic States:								
New York	5	6	435	462	16	6	43	21
New Jersey	0	2	150	144	0	0	10	6
Pennsylvania	1	6	411	426	0	2	23	31
East North Central States:								
Ohio	-------	6	-------	222	-------	6	-------	26
Indiana	1	3	186	77	176	76	7	7
Illinois	0	2	323	283	9	15	19	15
Michigan	0	2	310	224	13	27	8	5
Wisconsin	0	0	113	153	13	19	1	1
West North Central States:								
Minnesota	0	0	247	121	4	4	2	4
Iowa [1]	0	8	64	96	11	58	0	1
Missouri	0	[4] 0	108	[4] 88	3	[4] 45	17	[4] 3
North Dakota	0	-------	54	-------	1	-------	1	-------
South Dakota	0	0	41	38	5	11	2	0
Nebraska	1	2	47	46	13	17	5	1
Kansas	0	1	79	88	25	78	5	7
South Atlantic States:								
Delaware	0	0	15	5	0	0	0	1
Maryland [1]	1	2	61	35	0	0	13	14
District of Columbia	0	-------	19	-------	0	-------	0	-------
West Virginia	0	3	73	79	6	48	9	55
North Carolina	0	0	51	62	73	22	6	2
South Carolina	1	3	11	7	7	2	16	14
Georgia	0	0	20	18	61	0	7	11
Florida	0	0	13	18	49	1	10	1
East South Central States:								
Kentucky	-------	4	-------	42	-------	12	-------	16
Tennessee	0	0	34	42	16	4	24	10
Alabama	0	4	25	26	17	2	22	31
Mississippi	0	1	29	12	6	0	5	6
West South Central States:								
Arkansas	0	1	19	11	3	1	12	9
Louisiana	0	0	31	17	1	13	13	10
Oklahoma [3]	1	1	25	56	16	147	17	26
Texas	0	5	29	59	24	18	4	8
Mountain States:								
Montana	0	0	53	22	55	29	3	1
Idaho	1	1	41	13	0	0	0	0
Wyoming	0	0	29	37	0	4	2	0
Colorado	0	1	110	51	13	6	1	1
New Mexico	0	0	37	16	0	1	4	12
Arizona	0	0	6	2	0	0	1	2
Utah [1]	0	0	17	7	0	29	1	0
Pacific States:								
Washington	0	10	82	52	24	53	3	4
Oregon	0	10	46	22	18	29	3	6
California	3	22	262	156	4	26	13	5

[1] Week ended Friday. [3] Exclusive of Tulsa. [4] Exclusive of Kansas City.

Reports for Week Ended December 10, 1927

DIPHTHERIA	Cases
District of Columbia	20
Kentucky	15

MEASLES	
District of Columbia	4
Kentucky	37
North Dakota	1

MENINGOCOCCUS MENINGITIS	
Kentucky	2
North Dakota	6

POLIOMYELITIS	Cases
Kentucky	3

SCARLET FEVER	
District of Columbia	31
Kentucky	43
North Dakota	48

SMALLPOX	
Kentucky	8
North Dakota	1

TYPHOID FEVER	
North Dakota	2

Reports for Week Ended December 3, 1927

DIPHTHERIA

	Cases
District of Columbia	29
North Dakota	6

MEASLES

	Cases
District of Columbia	1
North Dakota	15

MENINGOCOCCUS MENINGITIS

	Cases
District of Columbia	1

SCARLET FEVER

	Cases
District of Columbia	19
North Dakota	54

SMALLPOX

	Cases
North Dakota	7

TYPHOID FEVER

	Cases
District of Columbia	1

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
November, 1927										
Arizona		74			57		1	19	0	9
Massachusetts	10	542	37		1,221		146	968	1	39
New Hampshire	0	15	62				5	37	0	1
New Jersey	7	747	42	2	212		19	477	0	41
North Carolina	1	615			2,479		3	520	10	64
North Dakota	0	16	1		20		8	195	35	6
Tennessee	1	247	192	112	386	24	18	223	19	138
Vermont	0	10			22		9	47	0	0

November, 1927

	Cases
Anthrax:	
Massachusetts	1
Chicken pox:	
Arizona	40
Massachusetts	958
New Jersey	738
North Carolina	351
North Dakota	136
Tennessee	128
Vermont	205
Dysentery:	
Tennessee	4
German measles:	
Massachusetts	57
New Jersey	44
North Carolina	6
Lead poisoning:	
Massachusetts	4
New Jersey	1
Lethargic encephalitis:	
Massachusetts	6
Tennessee	1
Mumps:	
Arizona	4
Massachusetts	402
North Dakota	8
Tennessee	32
Vermont	45

	Cases
Ophthalmia neonatorum:	
Massachusetts	161
New Jersey	2
Paratyphoid fever:	
Arizona	1
New Jersey	1
Rabies in man:	
New Jersey	1
Septic sore throat:	
Massachusetts	9
North Carolina	13
Tetanus:	
Massachusetts	3
Trachoma:	
Arizona	494
Massachusetts	3
New Jersey	1
North Dakota	3
Trichinosis:	
New Jersey	2
Whooping cough:	
Arizona	29
Massachusetts	606
New Jersey	630
North Carolina	448
North Dakota	10
Tennessee	59
Vermont	154

Number of cases of certain communicable diseases reported for the month of September, 1927, by State health officers

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Alabama	8	253	91	28	96	11	358	274	84
Arizona	4	4	5	4	1	0	57	29	9
Arkansas	48	52	33	150	38	1	[1] 71	230	34
California	218	339	135	200	295	33	630	79	435
Colorado	19	104	22	5	83	5	77	61	61
Connecticut	33	78	27	38	64	0	134	23	180
Delaware		7	4	2	8	0	9	9	10
District of Columbia	7	46	4		38	1	76	11	16
Florida	2	74	10	11	24	13	36	29	20
Georgia	11	181	57	15	72	10	49	220	46
Idaho	4	6	4	18	18	23	[1] 9	10	14
Illinois	204	314	75	154	400	52	1,391	251	904
Indiana	25	60	26	8	161	69	139	116	86
Iowa	11	80	16	9	48	32	54	15	29
Kansas	53	152	91	22	201	10	153	104	205
Kentucky [2]									
Louisiana	1	140	33	8	21	16	[1] 189	103	16
Maine	5	14	27	6	67	0	26	20	68
Maryland	45	117	35	17	64	0	256	115	174
Massachusetts	78	202	151	116	432	0	476	84	397
Michigan	95	229	55	98	345	53	305	68	563
Minnesota	57	177	17		230	2	296	25	99
Mississippi	167	192	362	146	98	11	290	136	780
Missouri	17	144	23	27	130	29	182	138	129
Montana	22	11	10		35	27	47	21	17
Nebraska	10	14	4	14	60	9	22	18	10
Nevada [3]									
New Hampshire		8			17			3	
New Jersey	89	330	25		179	6	390	73	458
New Mexico [4]									
New York	217	678	164	305	451	26	1,407	300	1,032
North Carolina	28	455	467		257	37		187	508
North Dakota	1	20	9		66	4	13	7	10
Ohio	162	420	56	161	437	34	545	206	359
Oklahoma [5]	7	274	54	8	87	55	90	385	80
Oregon	19	22	48	22	39	40	39	26	23
Pennsylvania [3]									
Rhode Island	3	31		5	56	0	34	11	14
South Carolina	33	403	169		68	12	137	356	235
South Dakota	4	12	5	7	62	15	6	18	49
Tennessee	50	163	142	10	155	17	218	425	76
Texas [2]									
Utah [2]									
Vermont	40	8	39	62	31	0	16	10	77
Virginia	77	194	71		220	1	[1] 147	195	320
Washington	72	63	112	75	71	37	169	41	52
West Virginia	26	75	22		167	28	29	175	91
Wisconsin	146	145	373	106	232	50	105	54	510
Wyoming	8	5	13	6	19	2	1	6	7

[1] Pulmonary.
[2] Reports received weekly.
[3] Reports received annually.
[4] Report not received at time of going to press.
[5] Exclusive of Oklahoma City and Tulsa.

Case rates per 1,000 population (annual basis) for the month of September, 1927

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Alabama	0.04	1.21	0.43	0.13	0.46	0.05	1.71	1.31	0.40
Arizona	.11	.11	.13	.11	.03	.00	1.51	.77	.24
Arkansas	.30	.33	.21	.95	.24	.01	[1] .45	1.46	.22
California	.60	.93	.37	.55	.81	.09	1.73	.22	1.19
Colorado	.22	1.18	.25	.06	.94	.06	.87	.69	.69
Connecticut	.25	.58	.20	.28	.48	.00	1.00	.17	1.34
Delaware		.35	.20	.10	.40	.00	.45	.45	.50
District of Columbia	.16	1.04	.09		.86	.02	1.71	.25	.36
Florida	.02	.66	.09	.10	.21	.12	.32	.26	.18
Georgia	.04	.69	.22	.06	.28	.04	.19	.84	.18
Idaho	.09	.14	.09	.41	.41	.52	[1] .21	.23	.32
Illinois	.34	.52	.13	.26	.67	.09	2.32	.42	1.51
Indiana	.10	.23	.10	.03	.62	.27	.54	.45	.33
Iowa	.06	.40	.08	.05	.24	.16	.27	.08	.15
Kansas	.35	1.01	.61	.15	1.34	.07	1.02	.69	1.36
Kentucky [2]									
Louisiana	.01	.88	.21	.05	.13	.10	[1] 1.19	.65	.10
Maine	.08	.21	.41	.09	1.03	.00	.40	.31	1.04
Maryland	.34	.89	.27	.13	.49	.00	1.95	.88	1.33
Massachusetts	.22	.84	.43	.33	1.24	.00	1.37	.24	1.14
Michigan	.26	.62	.15	.27	.93	.14	.83	.18	1.53
Minnesota	[1] .26	.80	.08		1.04	.01	1.34	.11	.45
Mississippi	1.13	1.30	2.46	.99	.67	.07	1.97	.92	5.30
Missouri	.06	.50	.08	.09	.45	.10	.63	.48	.45
Montana	.37	.19	.17		.60	.46	.80	.36	.29
Nebraska	.09	.12	.03	.12	.52	.08	.19	.16	.09
Nevada [3]									
New Hampshire		.21			.45			.08	
New Jersey	.29	1.07	.08		.58	6	1.29	.24	1.49
New Mexico [4]									
New York	.23	.72	.17	.32	.48	.03	1.56	.32	1.10
North Carolina	.12	1.91	1.96		1.08	.16		.79	2.13
North Dakota	.02	.38	.17		1.25	.08	.25	.13	.19
Ohio	.29	.76	.10	.29	.79	.06	.99	.37	.65
Oklahoma [5]	.04	1.57	.31	.05	.50	.32	.52	2.21	.46
Oregon	.26	.30	.66	.30	.53	.55	.53	.36	.31
Pennsylvania									
Rhode Island	.05	.54		.09	.97	.00	.59	.19	.24
South Carolina	.22	2.66	1.11		.45	.08	.90	2.35	1.55
South Dakota	.07	.21	.09	.12	1.08	.26	.10	.31	.86
Tennessee	.24	.80	.70	.05	.76	.08	1.07	2.08	.87
Texas [2]									
Utah [2]									
Vermont	1.38	.28	1.35	2.14	1.07	.00	.55	.35	2.66
Virginia	.37	.93	.34		1.05	.00	[1] .70	.93	1.53
Washington	.56	.49	.87	.58	.55	.29	1.32	.32	.41
West Virginia	.19	.54	.16		1.20	.20	.21	1.26	.65
Wisconsin	.61	.60	1.56	.44	.97	.21	.44	.23	2.13
Wyoming	.40	.25	.66	.30	.96	.10	.05	.30	.35

[1] Pulmonary.
[2] Reports received weekly.
[3] Reports received annually.
[4] Report not received at time of going to press.
[5] Exclusive of Oklahoma City and Tulsa.

PLAGUE PREVENTION WORK IN THE UNITED STATES

Seattle, Wash.—The reports of rat-trapping operations of the United States quarantine station at Seattle for the period September 1 to November 30, 1927, show a total of 6,581 rodents taken and 1,685 examined. None were found plague infected during the period.

Los Angeles, Calif.—The rodent division of the Los Angeles Board of Health reports 7,534 rodents collected and 4,645 examined during the eight weeks from October 9 to December 3, 1927. None were found plague infected.

San Francisco, Calif.—The weekly reports of plague suppressive measures in California during the period September 25 to November 26, 1927, show a total of 7,211 rodents received and 6,150 examined. No plague infection was reported during this period. The last case of human plague occurred in July, 1927, in Contra Costa county.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 99 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,610,000. The estimated population of the 93 cities reporting deaths is more than 29,940,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended December 3, 1927, and December 4, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
43 States	2,879	2,587	
99 cities	1,369	1,300	1,298
Measles:			
41 States	3,570	5,378	
99 cities	1,123	1,031	
Poliomyelitis:			
43 States	173	34	
Scarlet fever:			
43 States	3,785	4,222	
99 cities	1,085	1,404	1,067
Smallpox:			
43 States	586	619	
99 cities	100	83	40
Typhoid fever:			
43 States	423	532	
99 cities	56	61	71
Deaths reported			
Influenza and pneumonia:			
93 cities	728	779	
Smallpox:			
93 cities	0	0	

City reports for week ended December 3, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during non-epidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	3	2	2	0	0	0	2	
New Hampshire:									
Concord	22,546	0	0	0	0	0	0	0	0
Manchester	83,097	0	4	0	0	2	0	0	0
Nashua	29,723	-------	0	0	0	0	2	-------	0
Vermont:									
Barre	10,008	0	0	0	0	0	0	0	0
Burlington	24,089	0	1	0	0	0	2	0	0
Massachusetts:									
Boston	779,620	107	54	26	4	0	188	3	18
Fall River	128,993	2	5	8	0	0	0	0	4
Springfield	142,065	11	4	7	0	0	0	6	1
Worcester	190,757	13	5	19	1	0	1	55	3
Rhode Island:									
Pawtucket	69,760	3	2	7	0	0	0	3	3
Providence	267,918	0	10	27	0	0	2	22	3
Connecticut:									
Bridgeport	(1)	1	10	7	0	1	0	0	3
Hartford	160,197	-------	8	-------	-------	-------	-------	-------	-------
New Haven	178,927	11	4	4	0	1	41	8	6
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	66	24	37	-------	1	43	30	9
New York	5,873,356	164	186	319	10	11	64	15	151
Rochester	316,786	7	10	12	-------	0	2	1	4
Syracuse	182,003	29	10	1	-------	0	17	3	0
New Jersey:									
Camden	128,642	4	7	9	0	0	0	0	8
Newark	452,513	35	13	26	3	0	16	17	7
Trenton	132,020	0	6	0	1	0	5	0	6
Pennsylvania:									
Philadelphia	1,979,364	184	85	42	-------	10	6	83	44
Pittsburgh	631,563	53	29	60	-------	0	208	33	19
Reading	112,707	20	5	4	-------	0	4	0	1
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	18	19	11	0	2	7	0	14
Cleveland	936,485	94	57	107	1	2	21	91	15
Columbus	279,836	15	13	12	1	1	0	1	3
Toledo	287,380	112	17	1	2	2	20	4	5
Indiana:									
Fort Wayne	97,846	1	5	2	0	0	0	0	2
Indianapolis	358,819	20	13	4	0	0	7	29	12
South Bend	80,091	0	2	1	0	0	0	0	2
Terre Haute	71,071	2	3	2	0	0	0	0	1
Illinois:									
Chicago	2,995,239	116	122	114	16	4	7	39	53
Springfield	63,923	0	3	1	0	0	0	4	4

[1] No estimate made.

City reports for week ended December 3, 1927—Continued

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL—Continued									
Michigan:									
Detroit	1,245,824	56	82	56	4	2	107	37	27
Flint	130,316	13	14	3	0	0	2	32	3
Grand Rapids	153,698	3	7	1	0	0	19	5	1
Wisconsin:									
Kenosha	50,891	15	2	1	0	0	2	8	0
Milwaukee	509,192	87	31	11	2	2	7	18	18
Racine	67,707	16	3	3	0	0	3	1	2
Superior	39,671	6	2	1	0	0	0	0	2
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	0	2	0	0	0	1	0	2
Minneapolis	425,435	91	32	22	0	0	1	5	8
St. Paul	246,001	21	20	4	0	2	2	37	12
Iowa:									
Davenport	52,469	0	2	1	0	-------	1	0	-------
Des Moines	141,441	0	7	0	0	-------	0	0	-------
Sioux City	76,411	3	3	0	0	-------	1	21	-------
Waterloo	36,771	17	0	0	0	-------	0	0	-------
Missouri:									
Kansas City	367,481	28	13	12	0	0	0	29	7
St. Joseph	78,342	8	3	0	0	0	0	3	0
St. Louis	821,543	21	53	46	0	0	7	12	-------
North Dakota:									
Fargo	26,403	21	1	0	0	0	0	3	0
Grand Forks	14,811	5	0	0	0	-------	0	0	-------
South Dakota:									
Aberdeen	15,036	0	0	0	0	-------	1	0	-------
Sioux Falls	30,127	2	1	0	0	-------	1	0	-------
Nebraska:									
Lincoln	60,941	13	2	2	0	0	1	17	0
Omaha	211,768	26	7	3	0	0	0	0	2
Kansas:									
Topeka	55,411	22	3	3	0	0	0	0	0
Wichita	88,367	13	8	0	0	0	0	0	3
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	0	3	3	0	0	0	1	4
Maryland:									
Baltimore	796,296	127	39	29	11	1	46	1	30
Cumberland	33,741	0	2	1	2	0	0	0	2
Frederick	12,035	0	0	0	0	0	0	0	0
District of Columbia:									
Washington	497,906	32	24	29	0	0	1	0	14
Virginia:									
Lynchburg	30,395	4	2	9	0	0	1	0	1
Norfolk	(1)	-------	4	-------	-------	-------	-------	-------	-------
Richmond	186,403	2	17	21	0	0	6	0	3
Roanoke	58,208	0	5	1	0	1	0	0	4
West Virginia:									
Charleston	49,019	0	3	0	6	1	0	0	3
Wheeling	56,208	16	4	0	0	0	1	0	4
North Carolina:									
Raleigh	30,371	9	2	1	0	0	0	0	0
Wilmington	37,061	4	1	0	0	1	65	0	0
Winston-Salem	69,031	1	3	6	0	1	0	18	1
South Carolina:									
Charleston	73,125	0	2	1	39	0	0	0	2
Columbia	41,225	6	1	1	0	1	14	7	3
Greenville	27,311	2	1	0	0	0	8	6	1
Georgia:									
Atlanta	(1)	6	6	11	39	2	1	1	7
Brunswick	16,809	0	0	0	0	0	0	2	0
Savannah	93,134	0	3	4	14	0	26	0	0
Florida:									
Miami	69,754	2	-------	7	0	0	1	2	1
St. Petersburg	26,847	-------	0	-------	-------	0	-------	-------	1
Tampa	94,743	2	2	2	2	0	0	0	2

[1] No estimate made.

City reports for week ended December 3, 1927—Continued

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	3	0	0	0	0	0	6
Lexington	46,895	1		1	0	0	0	0	1
Louisville	305,935	2	10	6	4	0	0	2	12
Tennessee:									
Memphis	174,533	3	9	2	0	5	41	3	8
Nashville	136,220	13	5	3	0	1	0	1	8
Alabama:									
Birmingham	205,670	16	7	14	11	1	0	5	5
Mobile	65,955	0	2	0	2	2	0	0	0
Montgomery	46,481	4	2	8	0	0	3	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	0	2	4	0		0	4	
Little Rock	74,216	0	2	1	0	0	5	0	1
Louisiana:									
New Orleans	414,493	2	12	11	9	7	1	0	14
Shreveport	57,857	3	1	2	0	0	18	0	1
Oklahoma:									
Oklahoma City	(1)	5	3	10	9	0	1	0	7
Tulsa	124,478	4	6	4	0		0	3	
Texas:									
Dallas	194,450	5	15	27	0	2	0	0	3
Galveston	48,375	0	1	1	0	0	0	0	1
Houston	164,954	0	6	12	0	1	0	1	5
San Antonio	198,069	1	4	7	0	0	5	1	0
MOUNTAIN									
Montana:									
Billings	17,971	2	0	0	0	0	0	0	0
Great Falls	29,883	4	1	0	0	1	0	0	0
Helena	12,037	15	0	0	0	0	0	0	0
Missoula	12,668	4	0	0	0	0	0	0	0
Idaho:									
Boise	23,042	1	0	0	0	0	0	4	0
Colorado:									
Denver	280,911	44	14	7		2	3	17	4
Pueblo	43,787	26	4	1	0	0	0	0	1
New Mexico:									
Albuquerque	21,000	7	1	1	0	0	0	0	1
Utah:									
Salt Lake City	130,948	43	4	8	0	0	0	0	1
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	(1)	33	8	31	0		78	8	
Spokane	108,897	34	4	0	0		0	0	
Tacoma	104,455	2	3	3	0	0	2	0	4
Oregon:									
Portland	282,383	38	12	7	4	0	3	4	9
California:									
Los Angeles	(1)	20	45	57	19	1	0	8	22
Sacramento	72,260	7	3	3	0	0	2	0	1
San Francisco	557,530	59	17	5	3	3	5	14	3

[1] No estimate made.

City reports for week ended December 3, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
NEW ENGLAND											
Maine:											
Portland	2	3	0	0	0	1	1	0	0	14	15
New Hampshire:											
Concord	0	0	0	0	0	0	0	0	0	0	10
Manchester	2	3	0	0	0	1	0	0	0	0	--------
Nashua	1	0	0	0	0	0	0	0	0	--------	12
Vermont:											
Barre	0	0	0	0	0	1	0	0	0	0	4
Burlington	1	0	0	0	0	0	0	0	0	1	4
Massachusetts:											
Boston	49	62	0	0	0	8	2	2	0	24	208
Fall River	2	6	0	0	0	5	1	0	0	0	38
Springfield	6	7	0	0	0	1	1	1	0	17	20
Worcester	12	6	0	0	0	1	0	0	0	2	36
Rhode Island:											
Pawtucket	1	1	0	0	0	0	0	0	0	0	22
Providence	7	21	0	0	0	4	1	0	0	6	62
Connecticut											
Bridgeport	8	1	0	0	0	1	0	0	0	0	28
Hartford	5	--------	0	--------	--------	--------	0	--------	--------	--------	--------
New Haven	7	7	0	0	0	8	1	0	0	20	62
MIDDLE ATLANTIC											
New York											
Buffalo	20	34	0	0	0	13	1	1	1	13	133
New York	141	135	0	0	0	73	18	16	4	170	1,302
Rochester	10	3	0	0	0	1	1	0	0	2	75
Syracuse	11	8	0	0	0	4	1	0	0	7	42
New Jersey											
Camden	4	2	1	0	0	0	0	0	0	0	31
Newark	16	15	0	0	0	5	1	1	0	40	94
Trenton	2	1	0	0	0	2	0	0	0	1	47
Pennsylvania.											
Philadelphia	71	82	0	0	0	36	4	2	0	31	537
Pittsburgh	37	29	0	0	0	10	1	0	0	16	169
Reading	1	5	0	0	0	4	0	0	0	9	29
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	15	11	1	0	0	7	1	1	0	1	182
Cleveland	33	14	0	0	0	13	2	1	0	33	163
Columbus	11	21	0	0	0	1	0	2	1	7	66
Toledo	14	6	1	0	0	5	1	2	1	4	67
Indiana:											
Fort Wayne	2	6	0	2	0	0	0	0	0	0	25
Indianapolis	13	18	4	2	0	5	1	0	1	3	96
South Bend	4	0	0	0	0	0	0	1	0	0	9
Terre Haute	4	1	0	9	0	1	0	0	0	0	14
Illinois:											
Chicago	112	97	0	1	0	47	4	1	2	76	719
Springfield	2	3	0	0	0	0	0	0	0	0	24
Michigan:											
Detroit	80	56	1	0	0	21	2	0	0	54	256
Flint	8	20	0	0	0	1	0	0	0	9	28
Grand Rapids	10	5	0	0	0	0	0	1	1	1	28
Wisconsin:											
Kenosha	1	5	0	1	0	0	0	0	0	1	8
Milwaukee	18	20	1	0	0	9	1	0	0	15	127
Racine	4	7	0	0	0	0	0	0	0	6	6
Superior	2	4	1	0	0	0	0	0	0	0	11
WEST NORTH CENTRAL											
Minnesota:											
Duluth	8	6	0	0	0	2	0	0	0	4	17
Minneapolis	49	36	5	0	0	1	1	0	0	1	95
St. Paul	23	8	3	0	0	3	0	0	0	0	63

City reports for week ended December 3, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
WEST NORTH CENTRAL—contd.											
Iowa:											
Davenport	2	1	2	0	-------	-------	0	0	-------	0	-------
Des Moines	7	23	1	13	-------	-------	0	0	-------	0	-------
Sioux City	3	2	0	0	-------	-------	0	0	-------	3	-------
Waterloo	2	3	0	0	-------	-------	0	0	-------	0	-------
Missouri:											
Kansas City	11	19	0	0	0	6	1	3	0	7	75
St. Joseph	3	1	0	33	0	0	0	0	0	0	15
St. Louis	36	19	0	0	0	0	3	2	0	8	234
North Dakota:											
Fargo	2	11	0	0	0	0	0	0	0	3	5
Grand Forks	0	1	0	0	-------	-------	0	0	-------	0	-------
South Dakota:											
Aberdeen	0	3	0	0	-------	-------	0	0	-------	0	-------
Sioux Falls	2	0	0	8	-------	-------	0	0	-------	0	2
Nebraska:											
Lincoln	2	6	0	0	0	0	0	0	0	6	6
Omaha	6	10	2	3	0	3	0	0	0	0	67
Kansas:											
Topeka	2	4	0	0	0	0	0	0	0	11	10
Wichita	4	7	0	22	0	0	0	1	0	2	29
SOUTH ATLANTIC											
Delaware:											
Wilmington	4	2	0	0	0	3	1	0	0	0	29
Maryland:											
Baltimore	22	20	0	0	0	16	3	1	0	10	224
Cumberland	1	0	0	0	0	0	0	0	1	0	7
Frederick	1	0	0	0	0	0	0	0	0	0	3
District of Columbia:											
Washington	18	19	0	0	0	10	2	1	0	2	137
Virginia:											
Lynchburg	1	3	0	0	0	0	0	0	0	1	9
Norfolk	2	-------	0	-------	-------	-------	0	-------	-------	-------	-------
Richmond	7	6	0	0	0	1	1	0	0	6	35
Roanoke	2	5	0	0	0	0	0	0	0	0	18
West Virginia:											
Charleston	2	0	0	0	0	0	1	3	0	0	21
Wheeling	3	1	0	0	0	0	0	1	0	0	18
North Carolina:											
Raleigh	2	3	0	0	0	0	0	0	0	0	4
Wilmington	1	2	0	0	0	0	0	0	0	0	10
Winston-Salem	1	3	0	1	0	0	0	0	0	0	14
South Carolina:											
Charleston	1	2	0	0	0	5	0	1	0	1	38
Columbia	0	0	0	0	-------	-------	0	0	-------	0	14
Greenville	0	1	0	0	0	1	0	0	0	0	9
Georgia:											
Atlanta	4	18	1	0	0	8	1	0	0	1	69
Brunswick	0	0	0	0	0	0	0	0	0	0	4
Savannah	1	1	0	2	0	2	0	2	0	0	20
Florida:											
Miami	-------	1	-------	0	0	0	-------	0	0	0	20
St. Petersburg	0	-------	0	-------	0	0	0	-------	0	-------	8
Tampa	1	5	0	0	0	0	0	6	0	0	13
EAST SOUTH CENTRAL											
Kentucky:											
Covington	3	4	0	0	0	1	0	0	0	6	25
Lexington	-------	2	-------	0	0	1	-------	2	0	0	12
Louisville	5	14	0	1	0	5	1	0	0	0	89
Tennessee:											
Memphis	6	4	0	1	0	0	1	0	0	1	66
Nashville	3	4	0	0	0	1	1	1	0	0	47
Alabama:											
Birmingham	4	1	1	0	0	6	1	2	0	2	78
Mobile	2	2	0	0	0	2	0	0	0	0	25
Montgomery	0	0	0	0	0	0	0	0	0	0	-------

City reports for week ended December 3, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	2	0	0	0	....	....	0	0	....	0	....
Little Rock	2	5	0	0	0	2	1	0	0	0	....
Louisiana:											
New Orleans	7	3	0	1	0	9	1	4	1	11	155
Shreveport	2	4	0	0	0	1	0	0	0	0	23
Oklahoma:											
Oklahoma City	2	1	0	13	0	2	0	0	0	0	43
Tulsa	2	3	1	0	....	....	0	0	....	3	....
Texas:											
Dallas	5	6	0	0	0	3	1	1	0	2	57
Galveston	0	2	0	0	0	2	0	0	0	0	11
Houston	2	4	0	0	0	3	0	0	0	0	61
San Antonio	1	10	0	1	0	4	1	0	0	0	36
MOUNTAIN											
Montana:											
Billings	1	1	0	0	0	0	0	0	0	5	7
Great Falls	1	1	0	2	0	1	0	0	0	0	11
Helena	0	15	0	1	0	0	0	0	0	0	3
Missoula	0	0	0	0	0	0	0	0	0	0	3
Idaho:											
Boise	1	1	0	0	0	0	0	0	0	1	5
Colorado:											
Denver	11	14	2	0	0	5	0	0	1	3	76
Pueblo	2	2	0	0	0	0	0	0	0	0	8
New Mexico:											
Albuquerque	1	1	0	0	0	2	0	0	0	0	10
Utah:											
Salt Lake City	2	6	1	2	0	2	0	1	0	5	32
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	5
PACIFIC											
Washington:											
Seattle	9	3	2	1	....	....	1	1	....	0	....
Spokane	7	9	5	7	....	....	0	1	....	0	....
Tacoma	3	3	4	2	0	0	0	0	0	0	20
Oregon:											
Portland	8	12	5	15	0	2	1	2	0	1	....
California:											
Los Angeles	25	17	4	0	0	25	2	0	0	11	225
Sacramento	2	2	0	5	0	3	1	0	0	1	26
San Francisco	12	15	1	0	0	8	0	0	0	7	148

City reports for week ended December 3, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Boston	0	1	1	1	0	0	1	5	1
Fall River	0	0	0	0	0	0	0	1	0
MIDDLE ATLANTIC									
New York:									
New York	4	2	4	1	0	0	2	4	0
Rochester	0	0	0	0	0	0	0	1	0
Pennsylvania:									
Philadelphia	1	0	0	0	0	0	0	2	0
Pittsburgh	0	0	0	1	0	0	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	0	0	0	0	0	0	0	1	0
Cleveland	1	0	2	0	0	0	0	2	0
Columbus	0	0	1	1	0	0	0	1	1
Toledo	0	0	0	0	0	0	0	1	0
Illinois:									
Chicago [1]	7	4	0	0	0	0	1	0	1
Michigan:									
Detroit	0	0	1	1	1	0	0	4	2
Wisconsin:									
Milwaukee	0	0	0	0	0	0	0	1	0
Superior	1	1	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	0	1	1	0		0	0	0	0
St. Paul	0	0	0	0	0	0	0	1	0
Iowa:									
Des Moines	1		0		0		0	1	
Nebraska:									
Omaha	0	0	1	1	0	0	0	0	0
SOUTH ATLANTIC									
Maryland:									
Baltimore	1	0	0	0	0	0	0	1	0
District of Columbia									
Washington	1	0	0	0	1	0	0	0	0
West Virginia:									
Wheeling	0	0	0	0	0	0	0	1	1
North Carolina:									
Raleigh	1	0	0	0	0	0	0	0	0
Wilmington	0	0	0	0	0	1	0	0	0
South Carolina.									
Charleston [2]	1	0	0	0	0	0	0	0	0
Columbia	0	0	0	0	0	1	0	0	0
Georgia:									
Atlanta	0	0	0	0	0	1	0	0	0
Savannah [3]	0	0	0	0	0	1	0	0	0
EAST SOUTH CENTRAL									
Tennessee:									
Memphis	0	0	0	1	1	0	0	0	0
Alabama:									
Mobile [3]	0	0	0	1	1	0	0	0	0

[1] Rabies (human): 2 cases and 2 deaths at Chicago, Ill.
[2] Dengue: 1 case at Charleston, S. C.
[3] Typhus fever: 4 cases at Savannah, Ga., and 1 case at Mobile, Ala.

City reports for week ended December 3, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	1	0	0	0
Louisiana:									
New Orleans	0	0	0	0	3	2	0	1	0
Oklahoma:									
Oklahoma City	0	0	0	1	0	0	0	0	0
Texas:									
Dallas	0	0	0	0	0	2	0	0	0
Houston	0	1	0	0	0	1	0	0	0
San Antonio	0	0	0	0	0	1	0	0	0
MOUNTAIN									
Colorado:									
Denver	2	1	0	0	0	0	0	0	0
Utah:									
Salt Lake City	2	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	0	--------	0	--------	0	--------	0	1	--------
Spokane	1	--------	0	--------	0	--------	0	1	--------
Tacoma	0	0	0	0	0	0	0	2	2
Oregon:									
Portland	3	0	0	0	0	0	0	13	3
California:									
Los Angeles	1	0	0	0	0	0	0	0	1
Sacramento	0	0	0	0	0	0	0	1	1
San Francisco	0	0	0	0	1	1	1	2	0

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended December 3, 1927, compared with those for a like period ended December 4, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, October 30 to December 3, 1927.—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927	Nov. 27, 1926	Nov. 26, 1927	Dec. 4, 1926	Dec. 3, 1927
101 cities	224	214	228	[2] 215	230	228	212	[3] 204	224	[4] 233
New England	118	114	134	160	139	163	132	169	172	[5] 268
Middle Atlantic	143	226	163	205	159	234	155	213	177	252
East North Central	275	261	264	254	292	251	258	220	266	220
West North Central	252	195	222	161	214	153	192	179	210	179
South Atlantic	317	185	387	190	276	217	281	[3] 197	240	[6] 230
East South Central	424	153	264	209	367	239	217	122	300	168
West South Central	253	323	378	298	326	348	301	306	318	273
Mountain	219	99	182	279	146	207	201	171	228	144
Pacific	287	141	230	[2] 224	324	223	303	162	268	259

MEASLES CASE RATES

	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927	Nov. 27, 1926	Nov. 26, 1927	Dec. 4, 1926	Dec. 3, 1927
101 cities	81	77	106	[2] 96	135	125	134	[3] 137	177	[4] 191
New England	66	241	31	341	47	390	57	499	101	[5] 582
Middle Atlantic	16	72	44	124	28	93	30	129	37	180
East North Central	80	29	101	27	120	54	135	60	151	122
West North Central	151	14	147	16	198	22	109	24	113	24
South Atlantic	20	132	24	136	54	283	22	[3] 202	48	[6] 326
East South Central	26	234	10	76	31	148	16	163	26	224
West South Central	9	21	26	13	26	71	103	88	142	122
Mountain	793	9	1,531	18	1,950	72	2,543	27	2,844	27
Pacific	313	79	279	[2] 76	488	212	338	175	699	228

SCARLET FEVER CASE RATES

	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927	Nov. 27, 1926	Nov. 26, 1927	Dec. 4, 1926	Dec. 3, 1927
101 cities	188	149	206	[2] 150	212	177	213	[3] 159	242	[4] 185
New England	264	200	351	204	330	248	285	181	325	[5] 286
Middle Atlantic	94	110	125	110	130	152	138	122	157	155
East North Central	186	173	182	177	201	202	196	196	237	192
West North Central	415	165	347	185	407	232	411	204	436	250
South Atlantic	197	159	177	183	143	156	156	[3] 173	181	[6] 176
East South Central	248	168	295	153	228	112	238	87	243	148
West South Central	112	151	142	105	116	105	198	168	210	143
Mountain	583	180	702	153	638	234	784	180	930	360
Pacific	204	141	279	[2] 117	335	154	249	131	265	128

SMALLPOX CASE RATES

	Nov. 6, 1926	Nov. 5, 1927	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927	Nov. 27, 1926	Nov. 26, 1927	Dec. 4, 1926	Dec. 3, 1927
101 cities	3	18	5	[2] 16	5	19	5	[3] 22	14	[4] 17
New England	0	0	0	0	0	0	0	0	0	[5] 0
Middle Atlantic	0	0	0	0	0	0	0	0	0	0
East North Central	6	6	10	4	3	6	7	1	21	10
West North Central	2	159	10	157	4	161	30	202	48	115
South Atlantic	0	14	2	5	4	9	4	[3] 2	19	[6] 6
East South Central	10	0	10	0	0	5	5	0	0	10
West South Central	9	4	30	4	4	4	4	4	9	8
Mountain	0	36	9	27	0	27	0	54	18	45
Pacific	3	18	5	[2] 3	48	29	5	45	35	39

[1] The figures given in this table are rates per 100,000 population annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively
[2] Seattle, Wash., and Spokane, Wash., not included.
[3] Frederick, Md., not included.
[4] Hartford, Conn., and Norfolk, Va., not included.
[5] Hartford, Conn., not included.
[6] Norfolk, Va., not included.

Summary of weekly reports from cities, October 30 to December 3, 1927.—Annual rate per 100,000 population, compared with rates for the corresponding period of 1926—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug. 20, 1927	Aug. 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927
101 cities	24	19	21	[3] 15	16	15	12	[3] 10	10	[4] 10
New England	17	16	9	16	7	23	7	14	7	[5] 8
Middle Atlantic	12	20	21	15	21	14	13	10	9	10
East North Central	13	7	10	9	5	7	3	6	6	5
West North Central	26	24	16	28	6	20	8	14	10	12
South Atlantic	45	31	35	20	22	25	19	[3] 9	17	[6] 17
East South Central	103	36	52	5	36	15	31	15	41	15
West South Central	21	59	34	34	13	29	17	13	9	21
Mountain	91	36	27	9	27	18	18	27	9	9
Pacific	46	5	29	[2] 7	29	13	21	5	16	5

INFLUENZA DEATH RATES

	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug. 20, 1927	Aug. 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927
95 cities	11	9	14	8	10	9	10	[7] 11	14	[4] 13
New England	12	5	2	2	2	5	9	2	7	[5] 5
Middle Atlantic	9	8	10	9	10	7	7	10	13	11
East North Central	6	9	10	5	10	2	9	5	9	9
West North Central	6	10	13	2	6	10	2	6	4	4
South Atlantic	15	7	17	17	8	20	15	[3] 13	21	[6] 14
East South Central	21	15	26	15	31	20	41	46	41	46
West South Central	40	26	66	17	31	34	31	34	40	48
Mountain	18	18	27	18	9	36	36	18	46	27
Pacific	7	7	14	0	4	3	0	[8] 14	11	14

PNEUMONIA DEATH RATES

	Aug. 7, 1926	Aug. 6, 1927	Aug. 14, 1926	Aug. 13, 1927	Aug. 21, 1926	Aug. 20, 1927	Aug. 28, 1926	Aug. 27, 1927	Sept. 4, 1926	Sept. 3, 1927
95 cities	101	90	106	104	123	112	126	[7] 97	123	[4] 114
New England	99	63	90	95	104	102	132	60	118	[5] 103
Middle Atlantic	114	87	115	113	136	119	138	98	151	123
East North Central	85	93	87	89	104	96	98	89	89	103
West North Central	84	62	76	75	120	81	74	87	74	71
South Atlantic	121	118	140	120	144	160	166	[3] 148	106	[6] 153
East South Central	98	112	165	138	171	148	103	127	134	199
West South Central	115	90	110	129	154	142	207	112	163	108
Mountain	164	117	155	144	109	99	146	90	210	54
Pacific	49	100	99	100	74	76	124	[8] 76	152	103

[2] Seattle, Wash., and Spokane, Wash., not included.
[3] Frederick, Md., not included.
[4] Hartford, Conn., and Norfolk, Va., not included.
[5] Hartford, Conn., not included.
[6] Norfolk, Va., not included.
[7] Frederick, Md., and Los Angeles, Calif., not included.
[8] Los Angeles, Calif., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

BRAZIL

Leprosy.—In a lecture on leprosy which Dr. Aguiar Pupo, of the Medical College of Sao Paulo, has delivered on various occasions in the antileprosy campaign which is being carried on in the State of Sao Paulo, Brazil, the following statistics in regard to leprosy in Brazil are given:

Locality	Population	Cases verified		Probable cases	
		Number	Index per 1,000	Number	Index per 1,000
Northern focus	2,221,010	3,447	1.55	3,447	1.55
Southern focus	13,833,317	6,924	.50	22,483	1.63
Other States	14,531,278	1,372	.09	1,372	.09
Total	30,585,605	11,743	38	27,302	.89

The northern focus mentioned is made up of the three States of Amazonas, Para, and Maranhao, while the southern focus includes the Federal District and the States of Rio de Janeiro, Sao Paulo, Minas Geraes, and Parana. The populations given are those of the census of 1920.

A number of small asylums and hospitals for lepers are maintained in the State of Sao Paulo, some of which receive financial assistance from the State. Some lepers, however, are segregated in small isolated settlements. The State government has recently let the contract for the completion of a leprosarium some miles east of the city of Sao Paulo.

Mortality from certain diseases—Para—June 26–November 29, 1927.—During the period from June 26 to November 29, 1927, mortality from certain diseases and general mortality were reported at Para, Brazil, as follows: Gastroenteritis, deaths, 200; leprosy, 4; malarial affections, 176; tuberculosis, 146. Total number of deaths from all causes, 1,535.

CANADA

Communicable diseases—Week ended December 3, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases from seven Provinces of Canada for the week ended December 3, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever			1					1
Influenza	11							11
Poliomyelitis				3			2	5
Smallpox				90	3	15	3	111
Typhoid fever	3	8	7	21			1	40

Communicable diseases—Quebec—Week ended December 3, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended December 3, 1927, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	1	Scarlet fever	74
Chicken pox	48	Smallpox	5
Diphtheria	114	Tuberculosis	40
German measles	3	Typhoid fever	7
Influenza	7	Whooping cough	17
Measles	97		

COLOMBIA

Health conditions—Influenza—Santa Marta.—Information received under recent dates from Santa Marta, Colombia, shows as follows: During September, 1927, prevalence of malarial diseases and tuberculosis; in October and to November 15, prevalence of influenza with a number of fatalities in the native population; during the last two weeks of November, improved health conditions and decreased death rate.

CUBA

Communicable diseases—Habana—November, 1927.—During the month of November, 1927, communicable diseases were reported in Habana, Cuba, as follows:

Disease	New cases	Deaths	Remaining under treatment Nov. 30, 1927	Disease	New cases	Deaths	Remaining under treatment Nov. 30, 1927
Chicken pox	6		2	Paratyphoid fever	1		1
Diphtheria	6		3	Rabies	1	1	0
Leprosy			18	Scarlet fever	1		0
Malaria [1]	88	3	58	Typhoid fever [1]	30	7	44
Measles	11		5				

[1] Many of these cases from the interior.

Malaria—Water supply—Santiago de Cuba.—Under date of December 10, 1927, 751 cases of malaria were officially reported present at Santiago de Cuba, showing an increase of 283 new cases over the number reported for the previous week. It was stated that these figures could not be considered to be accurate, as many cases are home-treated and are never reported to the local authorities.

Water supply.—Analyses of samples of water taken from two of the principal reservoirs of the city show from 1010 to 1190 *B. coli* per cubic centimeter. The city water has been declared unfit for consumption unless previously boiled for at least five minutes.

HAWAII TERRITORY

Second plague-infected rat—Pohakea, Hawaii.—The finding of a second plague-infected rat was reported at Pohakea, Hawaii, November 10, 1927.[1]

IRAQ

Cholera—October 16–November 5, 1927—Summary.—Cholera has been reported in Iraq as follows:

Place	Week ended Oct. 29, 1927		Week ended Nov. 5, 1927		Summary to Nov. 5, 1927	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Amarah	4	6	8	8	178	140
Baghdad			10	5	11	6
Basrah					417	337
Diwaniyah	4	2	3		88	49
Hillah	7	6	3	2	29	20
Kerbala	1	1	4	5	39	27
Kut	9	4	1	1	29	19
Muntafiq					189	119
Ramadi	19	10	18	23	37	33
Total	44	29	47	44	1,017	750

JAMAICA

Smallpox (alastrim)—October 30–November 26, 1927.—During the four weeks ended November 26, 1927, one case of smallpox (reported as alastrim) was notified in the Island of Jamaica, occurring in a locality outside of Kingston.

Other communicable diseases.—During the same period other communicable diseases were reported in the island as follows:

Disease	Kingston	Other localities	Disease	Kingston	Other localities
	Cases	Cases		Cases	Cases
Cerebrospinal meningitis		1	Puerperal fever		2
Chicken pox	1	1	Tuberculosis	18	45
Dysentery	5	1	Typhoid fever	23	92

Population: Island, 926,000, Kingston, 62,707.

MADAGASCAR

Plague—September 16–30, 1927.—During the two weeks ended September 30, 1927, 86 cases of plague with 78 deaths were reported in the island of Madagascar. The occurrence was distributed according to type as follows: Bubonic, 38 cases; pneumonic, 29; septicemic, 19. The distribution according to locality was: Provinces—*Antsirabe*, cases 3; *Itasy*, cases, 7; *Moramanga*, cases, 3; *Tananarive*, cases 60, and in *Tananarive Town*, 13.

[1] Public Health Reports, Dec. 16, 1927, p. 3103.

MALTA

Communicable diseases—September-October, 1927.—Communicable diseases have been reported in the island of Malta for the months of September and October, 1927, as follows:

Disease	September, 1927, cases	October, 1927, cases	Disease	September, 1927, cases	October, 1927, cases
Bronchopneumonia	7	2	Measles	1	3
Chicken pox	2		Pneumonia	7	5
Diphtheria	4	9	Puerperal fever	1	
Erysipelas	2	15	Scarlet fever	21	30
Influenza	1	2	Trachoma	148	166
Lethargic encephalitis		1	Tuberculosis	20	26
Malaria	[1] 2		Typhoid fever	76	95
Malta fever	62	88	Whooping cough	4	4

Population: Civil, estimated, 227,440.

[1] Contracted abroad.

PERU

Mortality from communicable diseases—Deaths from all causes—Lima—September, 1927.—During the month of September, 1927, deaths from all causes and from communicable diseases were reported at Lima, Peru, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	3	Tuberculosis	89
Gastroentetitis	36	Typhoid fever	2
Influenza	5	All other causes	202
Malaria	4		

Population: 196,767.

RUMANIA

Poliomyelitis—November 16, 1927—Summary of fatalities and localities affected during epidemic.—On November 16, 1927, 531 cases of poliomyelitis (infantile paralysis) were reported present in Rumania, with 56 fatalities from the disease during the prevalence of the epidemic; 51 counties and 25 cities were affected. On December 12 the epidemic was said to be decreasing rapidly.

SENEGAL

Decreased prevalence of plague—Yellow fever.—During the week ended November 20, 1927, decrease in plague prevalence was reported in the districts of Baol and Cayor, interior of Senegal.

Seven cases of yellow fever were reported during the same period, 5 cases with 4 deaths occurred at Dakar, and a fatal case at Thies and one at Khombole (both in Syrians).

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

Reports Received during Week Ended December 23, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Canton	Oct. 30-Nov. 5	1	1	
India				Sept. 25-Oct. 8, 1927: Cases, 8,962; deaths, 4,644.
Calcutta	Oct. 23-Nov. 5	63	47	
Rangoon	do		1	
Iraq				Oct. 23-Nov. 5, 1927: Cases, 91; deaths, 73.
Amarah	Oct. 23-Nov. 5	12	14	
Baghdad	do	10	5	Week ended Nov. 5, 1927.
Diwaniyah	do	7	1	
Hillah	do	10	8	
Kerbala	do	5	6	
Kut	do	10	5	
Ramadi	do	37	33	
Java:				
Batavia	Oct. 29-Nov. 5	1	1	City.
Siam				Oct. 23-29, 1927: Cases, 14; deaths, 10. Apr. 1-Oct. 29, 1927: Cases, 783; deaths, 535.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Hawaii Territory:				
Pohakea	Nov. 10			Plague-infected rat.
India				Sept. 25-Oct 8, 1927: Cases, 1,370; deaths, 740.
Rangoon	Oct 23-29	5	5	
Java:				
Batavia	Oct. 23-Nov. 5	70	70	Province.
East Java and Madura—Surabaya	Oct 2-22	14	14	
Madagascar				Sept 16-30, 1927: Cases, 86; deaths, 78. Cases: Bubonic, 38; pneumonic, 29; septicemic, 19; deaths, bubonic, 30; pneumonic, 29; septicemic, 19.
Province—				
Antisirabe	Sept. 16-30	8	2	Bubonic.
Itasy	do	7	7	Bubonic, cases and deaths, 4; pneumonic, 2; septicemic, 1.
Moramanga	do	8	8	Pneumonic, 1; septicemic, 2.
Tananarive	do	60	55	Bubonic, cases, 26, deaths, 21; pneumonic, 19; septicemic, 15.
Tananarive Town	do	13	11	Bubonic, cases, 5, deaths, 3; pneumonic, 7; septicemic, 1.
Siam				Apr. 1-Oct 29, 1927. Cases, 12; deaths, 8.
Union of South Africa				
Cape Province—Richmond District	Oct. 23-29	2	2	Native.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
British South Africa:				
Northern Rhodesia	Oct. 15-28	28	44	Native.
Canada	Nov. 27-Dec. 3			Cases, 111.
Alberta	do	3		
Edmonton	Nov. 20-26	6		
Manitoba	Nov. 27-Dec. 3	3		
Winnipeg	Dec 4-10	1		
Ontario	Nov. 27-Dec. 3	90		
Hamilton	do	2		
Ottawa	do	19		
Toronto	do	25		
Quebec	do			Cases, 5.
Saskatchewan	do	15		
China:				
Manchuria—Fushun	Nov. 6-12	1		
Tientsin	Oct. 23-29	5		

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received during Week Ended December 23, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Great Britain:				
England—				
Bristol	Nov 20-26	2		
Leeds	do	3		
Manchester	do	2		
Nottingham	do	1		
Sheffield	Nov. 6-19	5		
India				Sept. 25-Oct. 8, 1927: Cases, 1,516; deaths, 238.
Calcutta	Oct. 29-Nov. 5		1	
Rangoon	Oct. 22-29	4	1	
Iraq:				
Baghdad	Oct. 30-Nov. 8	2	1	
Jamaica	Oct. 30-Nov. 26	1		Outside of Kingston.
Java:				
East Java and Madura	Oct. 2-15	7	1	
Siam				Oct. 23-29, 1927: Cases, 10; deaths, 1. Apr. 1-Oct. 29, 1927. Cases, 263, deaths, 68.
Spain:				
Malaga	Nov. 19-25		1	
Syria:				
Damascus	Oct. 22-Nov. 10	35		
Union of South Africa.				
Transvaal—				
Johannesburg	Oct. 23-29	7		

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Chile:				
Valparaiso	Nov. 6-12	1	1	
Mexico				
Guadalajara	Nov. 22 28		1	
Poland	Oct 9-22	25		
Union of South Africa:				
Cape Province	Oct. 23-29			Outbreaks in 5 districts.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Senegal:				
Dakar	Nov 14-20	5	4	
Khombole	do	1	1	Syrian
Thies	do	1	1	Do.

Reports Received from June 25 to December 16, 1927[1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-Oct. 15	119	11	
Canton	May 1-Oct. 29	102	67	
Foochow	July 24-Oct. 22			Present.
Hong Kong	July 17-Sept. 3	3	3	
Kulangsu	June 21	1		
Shanghai	June 19-25	2		
Do	July 31-Oct. 22		119	In international settlement and French concession.
Swatow	May 15-Oct. 29	138	13	
Tientsin	Aug. 27-Oct. 1	14		
India	Apr. 17-Sept. 24			Cases, 179,664; deaths, 97,933.
Bombay	May 8-Sept. 17	127	57	
Calcutta	May 8-Oct. 22	828	490	
Karachi	May 29-June 4	1	1	
Madras	June 19-Oct. 22	833	442	
Rangoon	May 8-Oct. 22	26	21	

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 16, 1927—Continued

CHOLERA—Continued

Place	Date	Cases	Deaths	Remarks
India, French Settlements in	Mar. 30-Aug. 27	253	168	
Indo-China (French)	Apr. 1-Sept. 20			Cases, 15,564.
Annam	do	4,509		
Cambodia	do	408		
Cochin-China	do	1,606		
Saigon	June 4-Oct. 2	13	4	
Laos	July 11-Sept. 20	223		
Tonkin	Apr. 1-Sept. 20	9,818		
Iraq:				
Amarah	Oct. 2-22	45	26	
Baghdad	July 24-Oct. 22	30	19	
Basra	July 17-Oct. 22	385	282	
Diwaniyah	Oct. 2-22	72	43	
Hillah	do	13	7	
Kerbala	do	14	10	
Kut	do	12	8	
Muntafique	do	9	4	
Japan:				
Yokohama	July 31-Aug. 6	1	1	
Java:				
Batavia	Reported Nov. 19	25	15	
Persia.				
Abadan	July 21-Aug. 13	215	183	
Ahwaz	July 31-Aug. 13	20	13	
Minab	Aug. 7-13		23	
Mohammerah	July 17-Aug. 27	194	155	
Nasseri	July 19-31		10	
Philippine Islands:				
Bulacan Province	June 7-July 8	3	2	
Leyte Province—				
Barugo	June 29	1	1	
Carigara	June 23	1	1	Final diagnosis not received.
Palo	May 18	1		
Manila	July 17-Aug. 27	2		
Siam	May 1-Oct. 22			Cases, 382; deaths, 227.
Bangkok	do	54	18	
On vessel:				
S. S. Adrastus	Reported Aug. 6	1	1	At Yokohama, Japan.
S. S. Montreal Maru	Sept. 20			At Muke, Japan.
S. S. Tabaristan	Oct. 6	1		Case in coolie removed at Basra.
S. S. Morea	Sept. 2			At Hong Kong, cholera-infected.
S. S. War Mehtar (oil tanker).	Aug. 4	1	1	At Saffagha, Egypt.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	Aug. 21-Oct. 20	3		
Oran	Aug. 21-Nov. 5	6	4	
Argentina	Jan. 1-Aug. 2			Cases, 80; deaths, 44.
Bahia	Nov. 21	1		In vicinity.
Province—				
Buenos Aires	Apr. 10-May 7	4	3	
Cordoba	Jan. 11-Aug. 6	52	29	
Do	Nov 21	10		Reported as having occurred 3 weeks previously.
Corrientes	June 1	1	1	
Entre Rios	Mar. 29-Aug. 13	8	1	
Santa Fe	Apr. 28-May 16	4	3	
Territory—				
Chaco—				
Barranqueras	May 29	3	2	
Formosa	June 25	3	2	
Pampa	July 27-Aug. 2	4		
Rio Negro	Aug. 6	1		
City—				
Merou	Reported July 14			Present.
Quilino	Nov. 26	1		
Rosario	May 7	1	1	
Do	Nov. 26	1		
Santa Fe	May 16	4	2	
Azores:				
St. Michaels Island	May 15-Oct. 29	12	1	
Ribeira Grande	June 12-18	1		
Brazil:				
Sao Paulo	June 3-9	1	1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 16, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
British East Africa:				
Kenya	Apr. 24-July 31	73	14	
Mombasa	July 24-30	1	1	
Nairobi	May 22-28	6		
Tanganyika	Mar. 29-May 28		37	
Do	July 24-Oct. 1		70	
Uganda	Jan. 1-Feb. 28	138	121	
Do	Mar. 27-June 30	782	593	
Canary Islands:				
Laguna district—				
Tejina	June 17	1		
Las Palmas	Oct. 8 11	8		
Ceylon:				
Colombo	May 1-Oct. 22	24	14	Plague rats, 5.
China:				
Amoy	July 3-23			Present in surrounding country
Mongolia	Reported Oct. 11		200	Approximate.
Tientsin	Aug. 14-20	2		
Tungliao	Reported Oct. 11-15.	200		
Ecuador:				
Guayaquil	June 1-Oct. 30	7		Rats taken, 95,408; found infected, 53.
Egypt:				
Alexandria	June 4-Sept. 2	4		
Beni-Souef	June 4-July 13	5	2	
Biba	June 4-10	1		At Nama.
Dakhalia	June 24-July 9	6	1	
Minia	Aug. 8-9	4		
Port Said	June 24-July 21	4	1	
Suez	Sept. 4	1		
Tanta district	June 4-10	1		
Greece	May 1-June 30	4	3	
Athens	June 1-Aug. 29	3		Including Piraeus.
Mytilene	Aug 9-Sept. 26	6		
Patras	May 30-Nov. 5	10	3	
Hawaii Territory:				
Hamakua	July 15-Aug. 30			2 plague rodents.
Pohakea	Nov. 10			1 plague rodent.
Honokaa	May 17-23	2	2	
Kapulena	Oct 22			Do.
Kukuihaele	Aug. 12-17	1	1	Do.
Paauilo	July 26-Aug. 1		4	
India	Apr. 17-Oct. 24			Cases, 25, 403; deaths, 11,164.
Bombay	May 8-Oct. 22	106	89	
Calcutta	Aug. 21-Sept. 3	18	10	
Madras	May 1-Oct. 15	1,858	864	
Rangoon	May 8-Oct. 22	81	75	
Indo-China (French)	Apr 1-Aug. 10	50		
Saigon	Sept. 2-16	2		
Kwang-Chow-Wan	May 21-July 31	73		
Iraq:				
Baghdad	Apr 8-May 28	12	1	
Java:				
Batavia	May 1-Oct. 22	419	399	Province.
East Java and Madura	May 22-Oct. 1	31	30	
Pasoeroean Residency	May 9			Outbreak reported at Nagdiwano.
Surabaya	Apr. 17-Sept 24	94	92	
Madagascar				Mar. 16-Apr. 30, 1927: Cases, 256; deaths, 135.
Province—				
Ambositra	Mar 16-Aug. 15	100	93	
Antisirabe	Mar. 16-Sept. 15	44	44	
Miarinarivo (Itasy)	do	94	83	
Moramanga	May 16-Aug. 31	32	31	
Tananarive	Mar. 16-Sept. 15	350	308	
Tananarive Town	Mar. 16-June 30	22	20	
Mauritius:				
Port Louis	May 1-June 30	1	1	
Nigeria	Mar. 1-May 31	228	117	
Peru	Apr.-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	Apr. 1-July 31	13	8	
Lima City	Apr. 1-30	5	1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 16, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Senegal	May 23-Oct. 16			Cases, 1,159; deaths, 646.
Baol	June 2-Oct. 16	235	109	
Cayor Frontier	July 4-Nov. 13	1,040	569	
Dakar	June 20-Oct. 2	147	94	
Facel	July 6	17	8	
Guindel	June 20-26	11	2	
Louga district	Sept. 18-Oct. 16	13	4	
M'Bour	July 6-10	28	23	
Medina	June 13-19	2	2	
Pout	July 4-10	1		
Rufisque	May 23-Sept. 25	223	167	
Thies district	May 23-Nov. 13	35	15	
Tivaouane	June 2-July 17	50	32	
Siam	Apr. 1-June 25			Cases, 12; deaths, 8.
Do	Oct. 2-22	2	1	
Bangkok	May 8-June 11	2	1	
Do	Oct. 2-22	2		
Syria:				
Beirut	June 11-Sept. 10	4		
Tunisia	Apr. 21-July 10	144		
Tunis	July 25-Aug. 1	1		
Turkey:				
Constantinople	May 13-19	1		
Do	Sept. 18-Oct. 1	2	1	
Union of South Africa:				
Cape Province—				
Maraisburg district	May 1-14	2	2	Native.
Orange Free State—				
Edenburg district	July 17-26	3	3	Natives; on farm.
Rouxville district	July 24-Aug. 6	2	2	
On vessel:				
S. S. Avoroff	June 24-30	1		Greek warship at port of Athens.
S. S. Capafric	Aug. 23	3	1	At Duala, French Cameroons, from Nigeria.
S. S. Elcano	Aug. 19	1		At Piraeus, Greece.
S. S. Madonna	Aug 24	1		At Dakar, Senegal, from ports south.
S. S. Ransholm	Aug. 5	3		At Gefle, Sweden, from Rufisque, Senegal.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr 21-Sept. 20			Cases, 955.
Algiers	May 11-June 30	8		
Oran	May 21-Nov 12	88		
Angola	June 1-Aug. 31	47		
Loanda	Sept 1-15	1		
Portuguese Congo	do	4		
Arabia:				
Aden	July 17-Aug. 1	2	1	
Brazil:				
Bahia	Aug. 7-13	1		
Porto Alegre	July 1-Sept. 30	11		
Rio de Janeiro	May 22-Oct. 29	26	22	
British East Africa:				
Kenya	Apr. 24-May 14	7	14	
Tanganyika	Mar. 29-June 18		22	
Do	Aug. 7-Sept. 17		29	
Zanzibar	Apr. 1-Aug. 31	121	41	
British South Africa:				
Northern Rhodesia	Apr. 30-Oct. 15	331	16	
Canada	June 5-Nov. 26			Cases, 1,129.
Alberta	June 12-Nov. 26			Cases, 250.
Edmonton	Oct. 23-29	1		
Calgary	June 12-Aug. 27	9		
British Columbia—				
Vancouver	May 23-Sept. 4	4		
Manitoba	June 5-Nov. 26			Cases, 65.
Winnipeg	June 12-Nov. 26	26		
Nova Scotia	Sept. 11-Oct. 15	2		
Halifax	Oct. 8-15	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 16, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Canada—Continued				
Ontario	June 5-Nov. 26			Cases, 605.
Kingston	Nov. 13-19		1	
Ottawa	June 12-Nov. 26	249		
Sarnia	Aug. 7-13	1		
Toronto	June 19-Nov. 19	55		
Windsor	Oct. 2-15	9		
Quebec	June 19-Nov. 26	40		
Riviere du Loup	Oct.29-Nov. 19	6		
Saskatchewan	June 12-Nov. 26			Cases, 193.
Moose Jaw	Aug. 14-Oct. 22	24		
Regina	July 17-Nov. 12	16		
Ceylon	May 1-7			Cases, 3, deaths, 2.
Colombo	July 31-Aug. 6	1	1	
China:				
Amoy	May 8-28	1		
Do	July 3-16			Present in surrounding country.
Antung	July 4-31	3		
Canton	Sept. 18-24	1	1	
Chefoo	May 8-14			Present.
Do	Oct. 9-29			Do.
Foochow	May 8-Oct. 22			Do.
Hong Kong	May 8-Sept. 17	22	21	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-July 30	8		
Dairen	May 2-June 3	10	5	
Fushun	May 15-Sept. 17	11		
Harbin	June 13-July 10	4		
Kaiyuan	July 3-9	2		
Mukden	May 22-Oct. 29	9		
Pensihu	July 3-Oct. 1	2		
Ssupingkai	May 8-July 9	2		
Tientsin	May 8-Oct. 22	31	4	
Chosen	Feb 1-July 30			Cases, 526, deaths, 211.
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr. 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr. 1-30	1		
Curacao	May 29-June 4	1		Alastrim
Ecuador.				
Guayaquil	June 1-Oct. 31	5		
Egypt	May 7-Sept. 30			Cases, 21; deaths, 4.
Alexandria	May 21-June 17	4	1	
Cairo	Jan. 22-Apr 15	14	3	
France	Apr. 1-Aug. 31			Cases, 207.
Lille	July 24-30	1		
Paris	May 21-July 31	14	2	
Gold Coast	Mar. 1-July 31	42	7	
Great Britain.				
England and Wales	May 22-Nov. 19			Cases, 4,702.
Birmingham	Aug. 14-Sept. 30	2		
Bradford	May 20-June 11	2		
Do	Oct. 23-Nov. 19	11		
Bristol	Oct. 16-Nov 19	10		
Cardiff	June 19-July 2	4		
Do	Oct. 23-29	1		
Leeds	July 17-Nov. 19	28		
Liverpool	July 17-30	1		
London	May 15-June 18	2		
Manchester	Oct. 2-Nov. 22	5		
Newcastle-upon-Tyne	June 12-Nov. 19	14		
Sheffield	June 12-Oct. 29	37		
Stoke-on-Trent	Aug. 21-27	1		
Scotland—				
Dundee	May 29-Sept. 3	6		
Greece	June 1-30	14		
Saloniki	July 12-Aug. 15		2	
Guatemala:				
Guatemala City	June 1-30		9	
Guinea (French)	June 4-10	9		
India	Apr. 17-Sept. 24			Cases, 77,885; deaths, 20,509.
Bombay	May 28-Oct. 22	254	160	
Calcutta	May 8-Oct. 22	418	319	
Karachi	May 15-Aug. 6	10	5	
Madras	May 22-Oct. 29	42	9	
Rangoon	May 8-Oct. 22	209	160	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 16, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
India, French Settlements in	Mar. 20-Aug. 27	174	155	
Indo-China (French)	Mar. 21-Sept. 20			Cases, 332.
Saigon	May 14-Sept. 9	4	1	
Iraq:				
Baghdad	Apr. 10-Oct. 22	10	5	
Basra	Apr. 10-Oct. 15	11	10	
Italy	Apr. 10-May 21	13		
Rome	June 13-July 17	3		Including consular district.
Jamaica	May 29-Oct. 29	47		Reported as alastrim.
Japan	Apr. 3-May 7			Cases, 19.
Nagasaki City	June 20-Aug. 14	26	7	
Taiwan Island	May 21-31	1		
Java:				
Batavia	May 22-Nov. 12	36	15	
East Java and Madura	Apr. 24-Oct. 1	46	1	
Latvia	Apr. 1-30	1		
Mexico	Mar. 1-June 30			Deaths, 621.
Acapulco	Aug. 28-Sept. 17	2	2	
Durango	June 1-30		1	
Guadalajara	Nov. 15-21		1	
Monterey	July 1-31	6	4	
San Luis Potosi	May 29-Aug. 13		11	
Tampico	June 1-July 31	1	2	
Torreon	Aug. 7-Oct. 1		2	
Morocco	Apr. 1-Aug. 31	283		
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in 2 localities.
Pasir Residency	Apr. 30-May 6			Epidemic outbreak.
Samarinda Residency	May 21-27			Do
Nigeria	Mar. 1-July 31	2,844	653	
Paraguay:				
Asuncion	July 10-23		2	
Persia:				
Teheran	Feb. 21-July 23		16	
Poland	Apr. 10-Aug. 6	20	2	
Portugal:				
Lisbon	May 29-Nov. 5	32	1	
Oporto	Sept. 3-9	1		
Senegal:				
Medina	July 4-10	7		
Siam	Apr. 1-Oct. 22			Cases, 256; deaths, 67.
Bangkok	May 1-Sept. 10	16	8	
Spain:				
Madrid	Aug. 1-31		1	
Malaga	Nov. 11-18		1	
Valencia	May 29-June 4	3		
Do	Sept. 25-Oct. 1	1		
Straits Settlements	June 12-18			Cases, 8.
Singapore	Apr. 1-June 18	7	2	
Sumatra:				
Medan	June 5-Aug. 20	3		
Switzerland:				
Berne	June 26-July 2	1		
Syria:				
Damascus	Aug. 11-Oct. 20	30		
Tunisia	Apr. 1-June 10			Cases, 10.
Tunis	June 1-10	1		
Union of South Africa:				
Cape Province	July 7-Aug. 20			Outbreaks.
Do	Oct. 2-8			Do.
Elliott district	May 11-June 10			Do.
Idutywa district	July 3-9			Do.
Kalanga district	May 11-June 10			Do.
Mount Ayliffe district	July 31-Aug. 6			Do.
Orange Free State	Aug. 7-13			Do.
Transvaal—				
Barberton district	May 1-7			Do.
Venezuela:				
Maracaibo	July 12-Oct. 3		4	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 16, 1927—Continued

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr 21-July 20			Cases, 399; deaths, 39.
Algiers	May 11-Oct 20	34		
Oran	May 21-Aug. 31	34		
Argentina:				
Rosario	Aug. 1-31		1	
Bulgaria	Mar 1-Aug. 10			Cases, 245; deaths, 21.
Sofia	June 4-Nov. 11	22	1	
Chile:				
Antofagasta	Apr 16-May 31	1		
Do	Sept. 25-Oct. 1		1	
Concepcion	May 29-June 4		1	
La Calera	Apr 16-May 31	1		
Ligua	Mar. 16-31	2		
Puerto Montt	Apr. 16-May 31	2		
Santiago	do	5	1	
Talcahuano	July 10 16		1	
Valparaiso	Apr 16 Sept. 3	5	3	
China:				
Manchuria—				
Harbin	July 25-Aug 21	5		
Mukden	May 29 June 4	1		
Tientsin	July 10-24	3		
Chosen	Feb. 1-July 31			Cases, 793, deaths, 68.
Chemulpo	May 1-Aug 31	3		
Gensan	do	4		
Seoul	Apr 1-Aug 31	35	3	
Czechoslovakia	do			Cases, 55
Egypt	May 28-Oct 21			Cases, 139; deaths, 24.
Alexandria	May 21-Aug 5	13	5	
Cairo	Jan 15-July 1	43	16	
Port Said	Sept 24-30	1		
Estonia	Apr 1 June 30			Cases, 5
Greece	June 1-30	2		
Athens	June 1-Sept 30	2	9	
Guatemala:				
Guatemala	Aug 25 31		1	
Iraq				
Baghdad	Apr. 24-30	1		
Irish Free State:				
Cork County	July 3 9	1		In urban district.
Donegal County—				
Letterkenney	Oct 16-22	4		
Italy	Year, 1926			Cases, 34.
Naples	do	31		
Latvia	Apr 1-July 31	32		
Lithuania	Feb 1-Aug 31	365	50	
Mexico	Feb 2-June 30			Deaths, 166
Mexico City	May 29-Nov. 5	95		Including municipalities in Federal District
San Luis Potosi	July 31-Aug 6		1	
Morocco	Apr. 1 Sept. 20	981		
Palestine	May 24 Oct. 31			Cases, 38
Haifa	do	10		
Jaffa	Aug 2-Oct. 3	3		
Jerusalem	June 28-Aug. 15	3		
Mahnaim	May 17-23	1		In Safad district
Nazareth	July 19-25	1		
Safad	May 17-Aug. 8	10		
Tel Aviv	Oct 1-10	1		
Peru:				
Arequipa	Apr. 1-30		1	
Do	Aug. 1-Sept 30		3	
Poland	Apr 10-Oct 8	1,142	106	
Portugal:				
Lisbon	May 29-June 4	1		
Oporto	Aug 20-27	1		
Do	Oct. 23-29	1		
Rumania	Apr 3-Aug. 27	1,000	69	
Spain:				
Seville	Aug. 19-25		2	
Syria:				
Aleppo	Sept 11-17	2		
Tunisia	Apr. 22-July 20			Cases, 158.
Tunis	July 5-Aug. 21	2		
Turkey:				
Constantinople	May 13-19		2	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 16, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Union of South Africa	Apr. 1-30			Cases, 55; deaths, 8, native. In Europeans, cases, 2.
Cape Province	Apr. 1-Oct. 22	42	5	
Albany district	June 5-11			Outbreaks.
East London	May 22-28	1		Do.
Glen Gray district	May 1-7			Do.
Kentani district	June 26-July 2			Do.
Port Elizabeth	Aug. 7-13	1		Do.
Qumbu district	May 1-7			Do.
Umzimkulu district	June 26-July 2			Do.
Natal	Apr. 1-Aug. 6	7	3	
Do	Oct. 16-22			Do.
Impendhle district	June 5-11			Do.
Orange Free State	Apr. 1-Oct. 1	5		
Transvaal	Apr. 1-30	1		
Johannesburg	July 3-Aug. 20	19	5	
Do	Oct. 9-15	5		
Yugoslavia	May 1-Oct. 31			Cases, 25; deaths, 5.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Ashanti:				
Obuasi	Aug. 6	1	1	
Dahomey (West Africa):				
Porto Novo	July 1	1	1	In Syrian woman.
Gold Coast	Apr. 1-June 30	60	22	
Do	Aug. 4	2		
Ivory Coast	July 29	1	1	
Liberia:				
Monrovia	May 29-Sept. 10	5	5	
Senegal	Oct. 3-Nov. 13			Cases, 60; deaths, 55.
Dakar	July 9	1		
Do	Aug. 8		2	
Do	Sept 17			Present.
Do	Oct 3-Nov. 6	21	16	
Geoul	Sept. 26-Oct. 2	1	1	
Island of Goree	Aug 22-Sept. 4	2	2	
Kebemer	Oct 9-23	2	2	
Kelle	Oct. 9-30	3	2	
Keur Sanba Kane	Oct. 31-Nov. 6	1	1	
Keur Madiop	Oct. 24-30	1	1	
Khombole	Aug. 1-Oct 9	6	3	
Louga	Sept. 26-Nov. 13	5	5	
Mehke	Oct. 17-Nov 13	6	3	
M'Bour	May 27-June 19	5	5	
N'Dande	Oct. 17-Nov. 6	4	3	
Ouakam	June 2-Aug. 14	4	2	
Pout	Sept. 19-25	1	1	
Rufisque	Oct. 9-16	1	1	
Sebikotane	Oct. 17-Nov. 13	4	2	
St. Louis	Aug. 1-Oct 2	3	3	
Thies	July 10	1	1	In European.
Do	Sept. 12-Nov. 13	15	15	
Tiaroye	Aug. 22-Sept 4	1	1	
Tivaouane	May 27-Sept. 11	6	5	
Togoland:				
Meiatza	Aug. 15-21	1	1	
On vessel:				
S. S. Desirade	Sept. 16	1	1	At Leixoes, Portugal, in passenger from Dakar, Senegal.

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TREASURY DEPARTMENT

PUBLIC HEALTH REPORTS

ISSUED WEEKLY

BY THE UNITED STATES
PUBLIC HEALTH SERVICE

VOLUME 42 :: :: NUMBER 52

DECEMBER 30 - 1927

SPECIAL ARTICLES

Meningococcus Meningitis, Smallpox, Poliomyelitis
Endemic Goiter Among School Children
Spadefoot Toad Tadpoles and Mosquito Larvae

UNITED STATES
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WASHINGTON
1927

UNITED STATES PUBLIC HEALTH SERVICE

HUGH S. CUMMING, *Surgeon General*

DIVISION OF SANITARY REPORTS AND STATISTICS

ASST SURG. GEN. R. C. WILLIAMS, *Chief of Division*

The PUBLIC HEALTH REPORTS are issued weekly by the United States Public Health Service through its Division of Sanitary Reports and Statistics, pursuant to acts of Congress approved February 15, 1893, and August 14, 1912.

They contain: (1) Current information of the prevalence and geographic distribution of preventable diseases in the United States in so far as data are obtainable, and of cholera, plague, smallpox, typhus fever, yellow fever, and other communicable diseases throughout the world. (2) Articles relating to the cause, prevention, or control of disease. (3) Other pertinent information regarding sanitation and the conservation of the public health.

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PUBLIC HEALTH REPORTS

VOL. 42 DECEMBER 30, 1927 NO. 52

PREVALENCE OF CERTAIN DISEASES IN THE UNITED STATES

MENINGOCOCCUS MENINGITIS, SMALLPOX, POLIOMYELITIS

Meningococcus meningitis.—A report dated December 19, 1927, shows an outbreak of meningococcus meningitis among Indians on the Shoshone Indian Reservation, Wyo. Exact information is not yet available, but there were probably 8 cases with 4 deaths to December 19, 1927.

Reports of meningococcus meningitis are not complete from many States, but during the year 1927 to date more cases of this disease have been reported in the United States than were reported during the preceding two years. Weekly reports are available for the three years 1925 to 1927 for 37 States and the District of Columbia, having an aggregate estimated population of more than 90,000,000. These States reported 2,317 cases of meningococcus meningitis for the 49 weeks from January 2, 1927, to December 10, 1927; 1,571 cases for the corresponding period of 1926, and 1,226 cases for the 49 weeks in 1925.

The following table gives a comparison of the reports of cases of meningococcus meningitis for the 16 weeks ended December 10, 1927, with the corresponding weeks of the two preceding years:

Meningococcus meningitis cases

Four weeks ended—	1927	Corresponding weeks	
		1926	1925
Sept. 17, 1927	122	85	101
Oct. 15, 1927	182	97	91
Nov. 12, 1927	162	96	66
Dec. 10, 1927	172	119	82
Total, 16 weeks	638	397	340

Smallpox.—Weekly telegraphic reports from the health officers of 37 States and the District of Columbia for the 16 weeks ended December 10, 1927, show an increase in cases of smallpox of 16 per cent over the reports for the corresponding period of last year and

an increase of 43 per cent over the reports received in 1925. The form of the disease is mild.

The following table gives a summary of the reports for 16 weeks of the years 1925, 1926, and 1927, the period covered in 1927 being from August 21 to December 10. The population of the 37 States is nearly 88,000,000:

Smallpox cases

Four weeks ended—	1927	Corresponding weeks	
		1926	1925
Sept. 17, 1927	556	421	373
Oct. 15, 1927	569	416	375
Nov. 12, 1927	1,227	1,017	875
Dec. 10, 1927	2,182	2,054	1,548
Total, 16 weeks	4,534	3,908	3,171

Poliomyelitis.—Although the incidence of poliomyelitis in the United States is steadily declining, the reports indicate more cases than are usual at this season of the year. The following table gives a summary of the reports of cases of poliomyelitis from the State health officers of 38 States for the 16 weeks from August 21 to December 10, 1927, arranged by four-week periods, compared with similar reports for the same periods of the years 1925 and 1926.

Poliomyelitis cases

Four weeks ended—	1927	Corresponding weeks	
		1926	1925
Sept. 17, 1927	1,751	474	1,120
Oct. 15, 1927	2,078	344	955
Nov. 12, 1927	1,374	217	466
Dec. 10, 1927	675	126	182
Total, 16 weeks	5,878	1,161	2,723

ENDEMIC GOITER AMONG SCHOOL CHILDREN

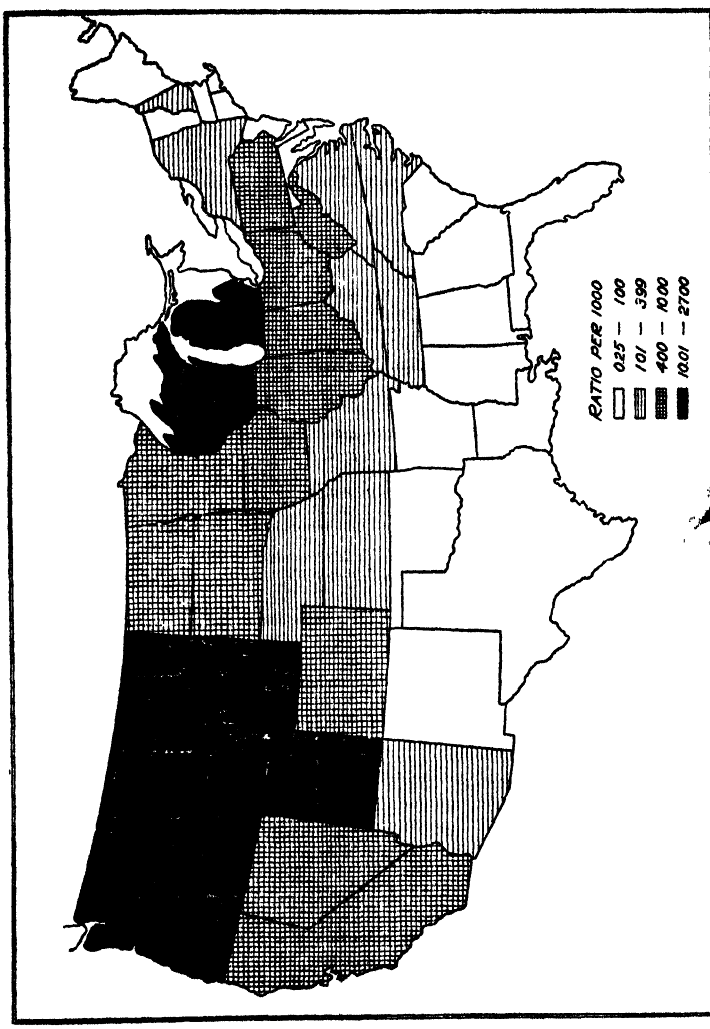
COMPARISON OF ENDEMIC GOITER INCIDENCE AMONG SCHOOL CHILDREN IN THE STATES OF MINNESOTA, OREGON, COLORADO, MONTANA, CONNECTICUT, AND MASSACHUSETTS, AND IN THE CITY OF CINCINNATI, OHIO

By Robert Olesen, *Surgeon, United States Public Health Service*

INTRODUCTION

Information concerning the regional distribution of endemic goiter in the United States is available from numerous sources. Unfortunately, these data suffer from the obvious defect of having been gathered by many investigators, possessing varying degrees of skill and experience in examining thyroids, as well as employing different

methods of examination. Inasmuch as a knowledge of the distribution of simple thyroid enlargement is essential to a more accurate understanding of the cause of the malady and the intelligent application of prophylactic measures, it is to be regretted that the available records are not more uniform in character.



Map showing ratio of simple goiter per 1,000 men examined for military service in each State of the United States during the World War. The rates are based on a total of 2,510,701 examinations

THE DRAFT EXAMINATIONS

Relatively few thyroid surveys had been made prior to the World War. However, even these preliminary investigations, while meager in scope and number, served to indicate variations in goiter incidence in different sections of the country. When the results of the draft examinations were made known, it was apparent that information of

value was at hand, especially as regards the amount of simple goiter among men of draft age. Because of the continued interest in the thyroid findings disclosed by the draft examinations, the tabulation summarizing the results is reproduced as Table 1. The rate of simple goiter per 1,000 men examined indicates that the disease was most frequent among those residing in the Pacific Northwest and Great Lakes region. Goiter was less frequently encountered among the drafted men from the Southern and Atlantic Coast States. The incidence of the malady in each State, as disclosed by the examinations of 2,510,701 men, for military service, is shown graphically on the map. This map, being based upon the thyroid findings among all of the drafted men, is more indicative of nation-wide conditions than the incidence map usually reproduced, which is based upon the first million examinations.

TABLE 1.—*Number of instances of endemic goiter and ratio per 1,000 examinations among 2,510,701 men examined for military service in the United States during the World War (by States)*[1]

State	Number of cases	Rate per 1,000	State	Number of cases	Rate per 1,000
Idaho	336	26.91	Kentucky	90	1.41
Oregon	421	26.31	District of Columbia	16	1.39
Washington	832	23.40	Kansas	48	1.25
Montana	576	21.00	Arizona	10	1.21
Utah	185	15.72	New York	308	1.19
Wyoming	102	15.37	Maryland	35	.94
Wisconsin	886	14.02	South Carolina	37	.94
Alaska	16	13.14	Connecticut	32	.89
Michigan	1,131	11.43	New Mexico	9	.88
North Dakota	156	8.73	Oklahoma	44	.72
Minnesota	578	8.04	New Hampshire	6	.70
West Virginia	307	7.89	Maine	13	.66
Illinois	1,397	7.79	Mississippi	24	.64
Iowa	458	6.68	Louisiana	32	.62
Indiana	464	6.49	Delaware	3	.59
Nevada	21	6.38	Alabama	29	.56
Ohio	798	5.59	Rhode Island	8	.55
Colorado	119	5.29	Georgia	33	.52
California	359	4.45	New Jersey	33	.43
Pennsylvania	829	4.10	Arkansas	17	.40
South Dakota	85	4.09	Massachusetts	29	.32
Missouri	342	3.99	Texas	36	.30
Virginia	188	3.38	Florida	6	.25
Nebraska	63	2.14	State not specified	186	1.96
Vermont	18	2.14			
Tennessee	120	1.96	Total	11,971	4.35
North Carolina	100	1.81			

[1] Table 18, p. 111, of Defects Found in Drafted Men, by A. G. Love and C. B. Davenport. Prepared under the direction of the Surgeon General, M. H. Ireland, War Department, Washington, D. C., 1920.

Probable sources of errors in the draft examinations.—In evaluating the returns from the physical examinations of drafted men it may be recalled that many physicians participated in the work. Consequently, it may be expected that the skill and experience of the examiners in detecting thyroid disorders varied considerably. Moreover, the extent to which simple goiter prevails among male adults is much less than the incidence among adolescent children, particularly girls. Despite the obvious defects in the goiter statistics produced by the draft examinations, these data constitute the most complete

information concerning the nation-wide distribution of the disease yet available.

INDEPENDENT THYROID SURVEYS

Many thyroid surveys have been made in different sections of the country since the draft figures became available. These later investigations were made largely by health officers and others interested in determining goiter incidence as a preliminary or concurrent aid to intelligent prophylaxis and treatment. A record of the results of independent goiter surveys has been published in Public Health Reports (1). A comparison of the results of thyroid surveys made by a large number of observers must be limited by a consideration of the conditions under which the data were secured. Differences in methods of examining and classifying thyroid enlargements, uncertainty as to what constituted a departure from normal thyroid status, and variations in skill and experience on the part of the examiners are factors influencing the validity of such surveys. However, the general trend of the surveys made by independent investigators is similar to that disclosed by the draft examiners.

SURVEYS BY THE PUBLIC HEALTH SERVICE

Representatives of the Public Health Service have made extensive goiter surveys in the States of Minnesota, Oregon, Colorado, Montana, Connecticut, and Massachusetts, and in the city of Cincinnati, Ohio, the results being recorded in separate publications (2), (3), (4), (5), (6), (7), (8). These surveys have included 55,179 boys and 70,307 girls in 192 localities.[1] In Oregon, Colorado, Connecticut, Massachusetts, and Cincinnati the surveys were conducted by the same examiners, enabling comparisons which serve to indicate differences in general prevalence, in degrees of enlargement, and in geographical distribution. The methods employed in examining and the classification used in recording thyroid status are set forth in two of the reports which have been published (4), (8). The outstanding features of these comparative data have been assembled in Table 2. An examination of the material contained in this table shows that endemic goiter is most frequent in Minnesota and least frequent in Connecticut and Massachusetts, the other States occupying intermediate positions.

[1] In 1927 there was a resurvey of 12,722 boys and 12,818 girls in the elementary and high schools of Cincinnati, the result indicating a reduction in the number of moderate and marked thyroid enlargements since the original survey in 1924. The results of the 1927 survey have not been included in the present total.

TABLE 2.—*Comparison of percentages of all degrees, slight degrees, and marked degrees of thyroid enlargement among boys and girls examined in six States and one city by the United States Public Health Service*

State or city	Sex	Number of examinations	Percentage of enlargements		
			All degrees	Slight	Moderate and marked
Minnesota	Boys	1,770	40.9	35.0	5.9
	Girls	2,291	71.0	47.0	24.0
Cincinnati	Boys	21,314	26.6	24.7	1.8
	Girls	21,018	39.8	32.1	7.6
Oregon	Boys	8,181	22.3	22.2	.086
	Girls	9,427	38.3	37.3	1.0
Colorado	Boys	3,950	25.6		
	Girls	13,451	30.4		
Montana	Boys	4,631	13.4		
	Girls	4,690	32.0		
Connecticut	Boys	5,797	7.0	6.9	.017
	Girls	6,608	29.4	28.0	1.4
Massachusetts	Boys	7,140	8.7	8.6	.14
	Girls	7,844	22.0	21.3	.8

Comparisons of goiter incidence.—The incidence of goiter among the boys and girls examined in Minnesota, Cincinnati, Oregon, Colorado, Montana, Connecticut, and Massachusetts is displayed graphically in Chart 1. The greatest proportionate difference between the per-

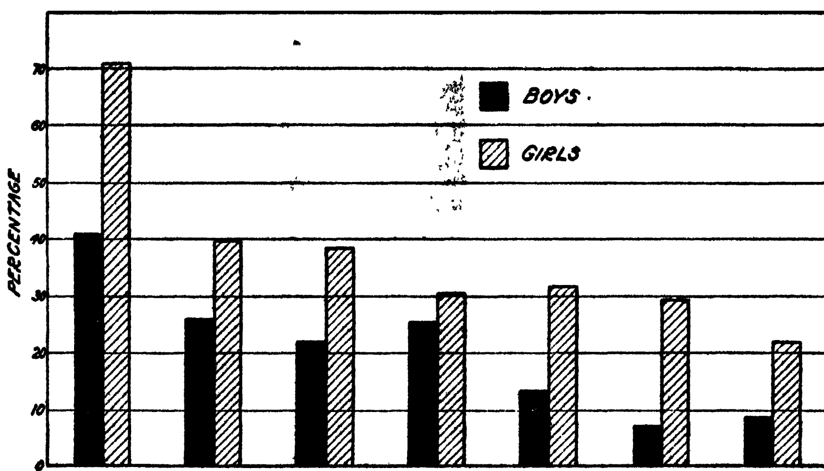


CHART 1.—Comparison of percentages of endemic thyroid enlargement (by sex) among 55,179 boys and 70,307 girls in 192 localities in six States and one city surveyed by representatives of the Public Health Service

centages of goitrous involvement in boys and girls is found in Connecticut and the least in Colorado. In the States under consideration the greatest percentage of goiter was found among the girls of Minnesota and the least among the girls of Massachusetts. Goiter prevailed to about the same extent among the girls of Cincinnati and Oregon. In Colorado, Montana, and Connecticut approxi-

mately the same incidence of goiter prevailed among the girls, though the rates are less than in Minnesota, Cincinnati, and Oregon.

Chart 1 also shows that endemic goiter was most frequent among the boys examined in Minnesota and least frequent among those of Connecticut. In Cincinnati and Colorado the rates among the boys were approximately the same. In Oregon, Montana, and Massachusetts the goiter rates among boys were less than in Colorado, in the order named. This chart affords considerable assistance to an understanding of the nation-wide prevalence of simple goiter.

Variations in degrees of thyroid enlargement.—The percentages of slight thyroid enlargement among boys and girls of Minnesota, Cincinnati, Oregon, Massachusetts, and Connecticut, examined under comparable conditions, are displayed graphically in Chart 2.

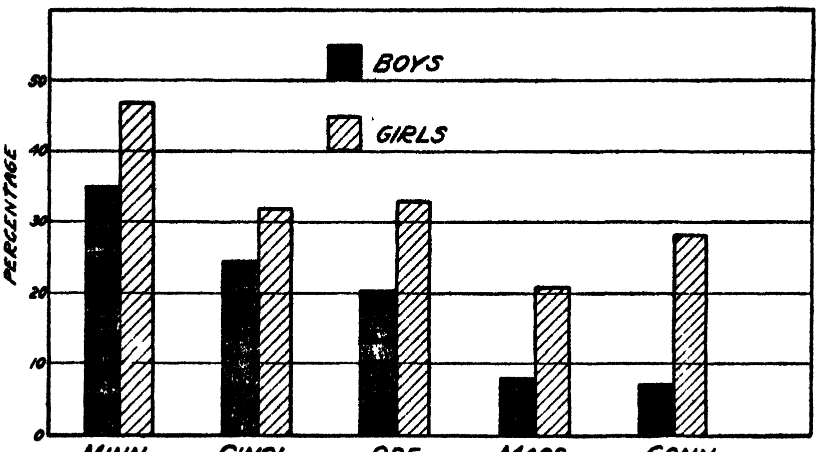


CHART 2.—Comparison of percentages of slight thyroid enlargement (by sex) among 46,598 boys and 52,166 girls in 131 localities in four States and one city surveyed by representatives of the Public Health Service employing uniform methods

Included in the surveys upon which these percentages are based were 46,598 boys and 52,166 girls in 131 communities examined by or under the supervision of the same physicians. Slight enlargements were more frequent among the girls than among the boys of Minnesota, Cincinnati, Oregon, Massachusetts, and Connecticut to the extent shown in the following ratios: 1.3 to 1, 1.3 to 1, 1.6 to 1, 2.5 to 1, and 3.8 to 1, respectively. According to Marine, the intensity of general thyroid incidence in a locality is indicated by the ratio of prevalence among girls to that among the boys. The more nearly this ratio approaches 1 to 1, the more general is the distribution of endemic goiter. The order of frequency of slight enlargement among the boys of the five sections shown in Chart 2 was Minnesota, Cincinnati, Oregon, Massachusetts, and Connecticut, the first named State having the greatest amount.

In Chart 3 the percentages of moderate and marked thyroid enlargements combined among the boys and girls of four States and one city are shown graphically. These degrees of thyroid involvement are most frequently encountered in Minnesota. Moreover, when compared with slight enlargement, their rate of frequency is much higher among girls than boys. In Minnesota, Cincinnati, Massachusetts, Oregon, and Connecticut the ratios between per-

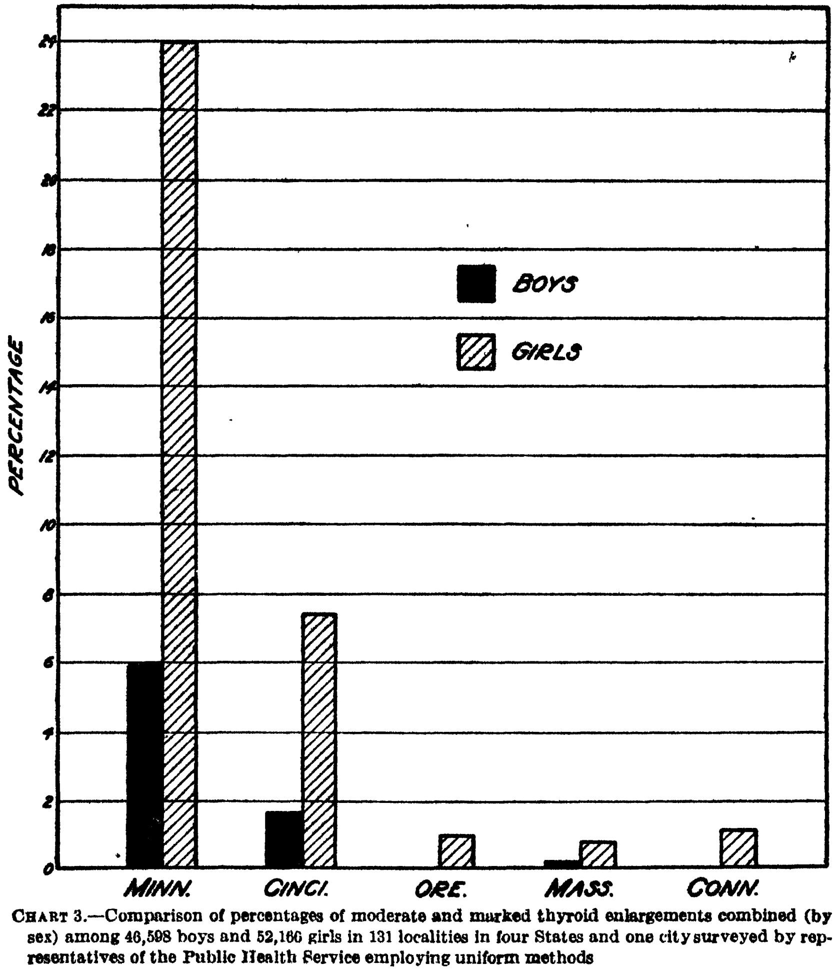


CHART 3.—Comparison of percentages of moderate and marked thyroid enlargements combined (by sex) among 46,598 boys and 52,166 girls in 131 localities in four States and one city surveyed by representatives of the Public Health Service employing uniform methods

centage incidence of moderate and marked enlargements combined among girls and boys were 4.1 to 1, 4.2 to 1, 5.7 to 1, 12.5 to 1, and 82.4 to 1, respectively. Moderate and marked thyroid thickenings are relatively infrequent among the girls of Oregon, Massachusetts, and Connecticut, and also rare among the boys of those States.

The incidence of certain degrees of thyroid enlargement, among the boys and girls of different ages in four States and one city, is presented graphically in Chart 4. The differences in goiter incidence

in the several States are clearly indicated. Moreover, the greater incidence among girls, the similarity in trends, the decrease in preva-

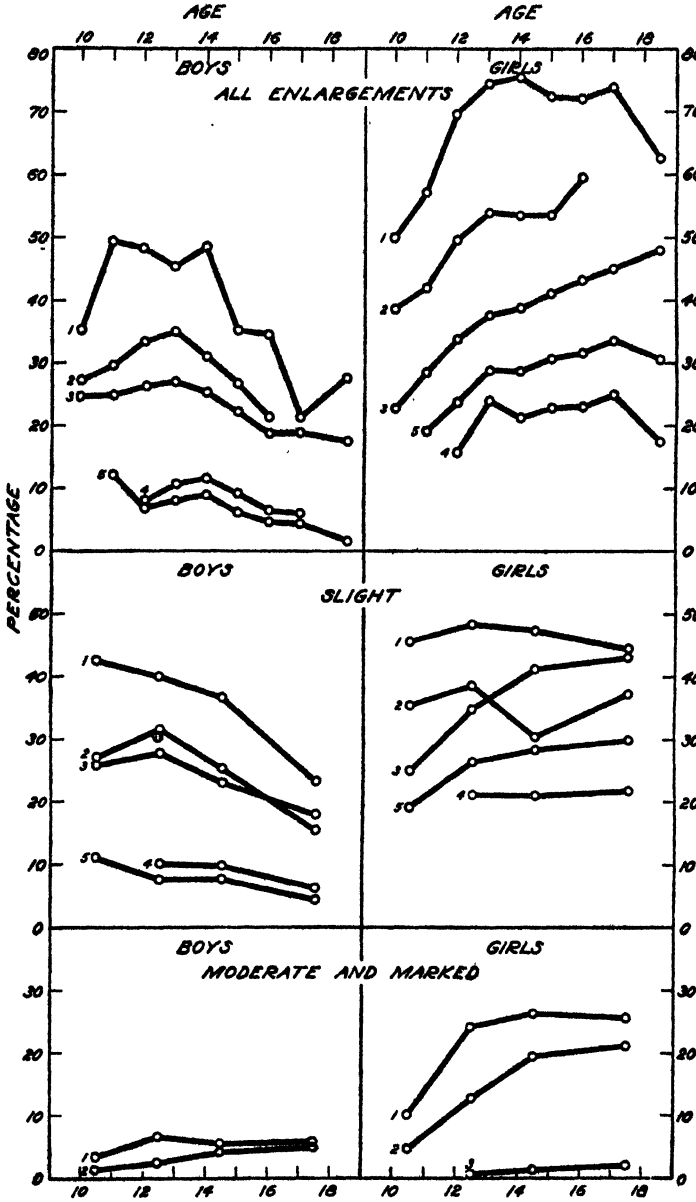


CHART 4.—Percentages of children of each age group (by sex), according to degrees of thyroid enlargement, in the States of Minnesota, Oregon, Massachusetts, and Connecticut, and in the city of Cincinnati, Ohio. (1. Minnesota; 2. Cincinnati; 3. Oregon; 4. Massachusetts; 5. Connecticut)

lence among the boys of the higher ages, and the maintained increase among the girls are clearly shown.

SUMMARY

1. The physical examinations of drafted men disclosed a higher incidence of simple goiter among those from the Pacific Northwest and the Great-Lakes region.

2. Independent goiter surveys tend, in general, to support the main indications of the draft examinations.

3. Goiter surveys made in six States and one city, by representatives of the Public Health Service, likewise confirm, in the main, the chief findings of the draft examinations. It appears, however, from the Public Health Service surveys, that endemic goiter is probably more common in some portions of the Middle West than in the Pacific Northwest.

4. A comparison of goiter rates in Minnesota, Cincinnati, Oregon, Colorado, Montana, Connecticut, and Massachusetts shows prevalence of the disease in these localities in the order named, the greatest incidence being in the State first named.

5. Slight thyroid enlargements are present in approximately the same relative proportion among the boys and girls of the four States and one city surveyed by the same representatives of the Public Health Service, and considerably more frequent among the girls. Goiter of marked size is relatively infrequent among the girls and rare among the boys of Oregon, Massachusetts, and Connecticut.

6. Comparisons of age incidence of goitrous individuals in the places studied by the Public Health Service show similar trends.

COMMENT

There are manifestly wide variations in the methods of determining thyroid status. Moreover, the classification of various degrees and types of thyroid involvement range within unnecessarily great limits. If accurate and useful information is to be secured in the future, it is essential that uniform methods be adopted.

The training of examiners in comparable diagnostic procedure, together with a reasonable amount of practice, interest, and care, will do much to insure improvement in the records hereafter gathered.

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THE TADPOLE OF THE SPADEFOOT TOAD AN ENEMY OF MOSQUITO LARVÆ

By M. A. Barber, *Special Expert*, and C. H. King, *Technical Assistant, United States Public Health Service*

The tadpoles of most toads and frogs are herbivorous, and live in entire harmony with mosquito larvæ. However, in 1914, one of us (Barber (1)) observed tadpoles apparently preying on mosquito larvæ in a brackish pool in the island of Palawan, P. I. A tadpole was dissected and mosquito larvæ were found in the upper part of the gut. The species of this tadpole is unknown.

In early July, 1927, a certain kind of tadpole was abundant in shallow borrowpits near Espanola, N. Mex. We observed that pools in which this tadpole was plentiful were comparatively free from mosquito larvæ, which abounded in other pools near by. We caught some specimens of tadpoles and brought them to the laboratory where we carried out the following experiments:

We put three tadpoles into a pan with 75 culicine larvæ. In the course of half an hour the tadpoles were seen to catch five larvæ. On the following day, all but five of the larvæ had disappeared. Then 11 culicine pupae and one larva were put into the pan. Within five and one-half hours all had disappeared. On the following day, we put 26 larvæ of *Anopheles pseudopunctipennis* into the pan. In half an hour all but two had been eaten. A tadpole was seen to catch and ingest an anopheline larva.

The following field experiments were done:

1. We put mosquito larvæ into a pool containing many tadpoles. The tadpoles were seen to congregate in places where the larvæ were put in, but later it was observed that they tend to congregate at margins wherever water is poured in, whether it contains larvæ or not. Within two days all larvæ had disappeared.

2. We divided a borrow pit containing many larvæ of *Aëdes dorsalis* into two nearly equal parts by means of a dam. The pool was about 6 yards long, 2 yards wide, and 2 inches deep at the middle. Into one end of the pool we placed about 100 tadpoles. These were large, and the most of them had begun to develop legs. The portion of the pool into which we put the tadpoles contained approximately 1,000

larvæ and 300 pupæ. The control end contained about an equal number. Twenty-six hours later we found approximately 230 larvæ and pupæ with the tadpoles, a reduction of over 80 per cent. The surviving larvæ and pupæ were mostly crowded in out-of-the-way corners. The control end of the pool had about as many larvæ and pupæ as it had at the beginning of the experiment.

We took some tadpoles out of the divided borrow pit about 2½ hours after they had been put in with the larvæ, and dissected them. In one specimen we found two larva siphons and one larva head, both in the upper part of the gut. In a second tadpole we found the remains of a pupa, and one nearly intact larva. Living crustaceans were abundant in the intestines of the tadpoles. The pool swarmed with these crustaceans; so it seems that the tadpoles ate larvæ in spite of the presence of an abundance of other living food.

In preying on larvæ the tadpoles rarely, if ever, pursued a wriggling larva after the manner of the top-feeding minnow, *Gambusia;* but they combed the water industriously at the surface and beneath, and when they came in contact with larvæ they would often seize them mumble them in the mouth a moment, then swallow them. They did not always try to capture a larva when they touched it, but they were so persistent in their search for food that they eventually caught large numbers.

Specimens of two tadpoles known to have eaten larvæ, and of one nearly mature toad were sent to Prof. A. H. Wright of Cornell University, who identified the species as *Scaphiopus hammondii*, Hammond's spadefoot.

It is clearly proved by our observations that *S. hammondii* is an active and efficient enemy of mosquito larvæ, and was instrumental in considerably reducing the numbers of such larvæ in the borrow pits of a certain neighborhood. Whether it would be worth while to colonize this toad in new localities, as is commonly done with larvivorous fish, is yet to be proved. Its habitat is said to be limited to temporary pools, while most of the *Anopheles* are produced in more permanent waters, rich in aquatic vegetation. However, culicines often swarm in rain-filled pools, and *Anopheles* may occur there in large numbers, especially where fish have been killed out by the previous drying-up of the water. A toad has at least the advantage of being able to travel overland. The season of the spadefoot is usually short and limited to early summer, a marked disadvantage as an enemy of *Anopheles*, as well as of other mosquitoes. Its range is western,[3] but it is possible that it might be colonized in other regions. Sometimes an animal or plant will multiply more extensively in an alien environment than in its native habitat.

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[3] Stejneger and Barbour, in their check list of 1923, give the following range of Hammond's spadefoot: Western and southwestern States from Montana south to Texas and Mexico, westward to the Pacific coast States and northern Lower California.

On the whole, no such antilarval efficiency can be expected of this tadpole as is exhibited by certain larvivorous fish; but its propagation, if such is practicable, could not interfere with any other enemy of mosquito larvæ, and the more abundant and the greater the variety of natural enemies of mosquito larvæ the better. The spadefoot would probably find its greatest usefulness in localities where there is extensive breeding of mosquitoes in shallow, temporary waters.

The following account of the spadefoot toad is abridged, and in part quoted, from a description of the life history and feeding habits of the spadefoot toad of the western plains (*Scaphiopus hammondii bombifrons* Cope) published by Professor Gilmore (2) of Colorado College. If *bombifrons* is not identical with our species, its habits are probably essentially the same.

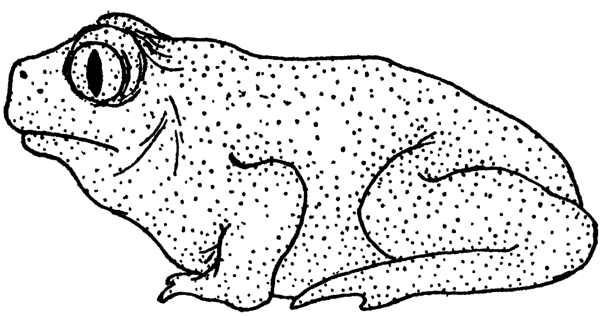

FIGURE 1.—Adult spadefoot toad (After Gilmore)

The spadefoot toad is rather small, the total length of the body being two inches. The legs are short; the hands are unusually small and the fingers short. The foot is webbed, the webs deeply indented. On the inner sole, a black horny sharp-edged tubercle—the "spade"—is developed. This is the principal instrument for burrowing.

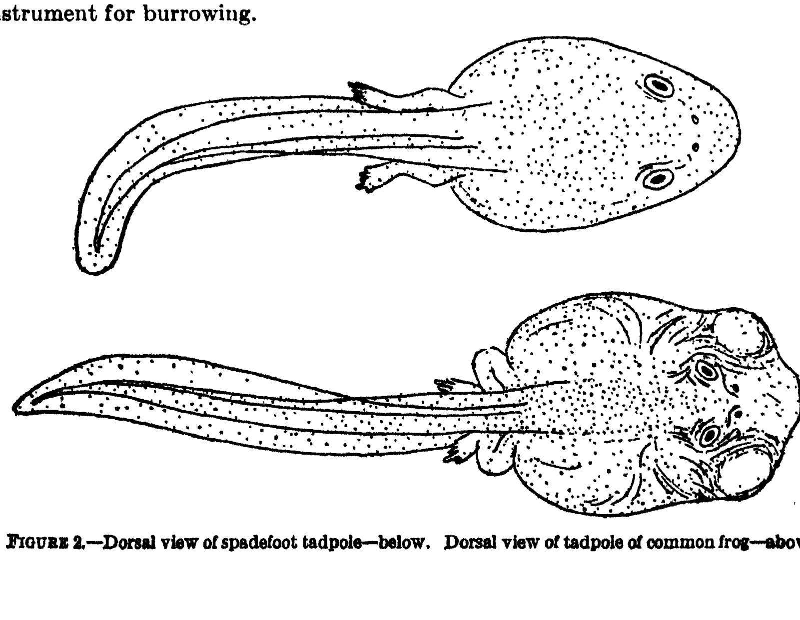

FIGURE 2.—Dorsal view of spadefoot tadpole—below. Dorsal view of tadpole of common frog—above

The skin is smooth and fine in texture, yellowish olive to dark gray in color. Two curving dark bands extend backward from the eyes. These bands are made of spots, each of which has a smooth orange-colored tubercle in its center. In some specimens the bands are indistinct, the entire back being of uniform color. The underparts are dingy white, purplish posteriorly, the throat blackish. The snout is short; the end rather squarely truncated. The end of the snout is covered with heavy horny skin, which is continued posteriorly between the eyes to the top of the head. Between the eyes it is thickened to form a marked elevation.

The large eyes face forward and outward. The pupil is vertical, a characteristic found only in spadefoot toads and one other very rare form found in the State of Washington. The iris is golden; the ear not distinct.

The short body, the large eyes, the shortness and thickness of the snout give to the spadefoot a curious pug-dog expression. (Fig. 1.)

The spadefoot lives underground in burrows of its own making and is seldom seen above ground except during continuous rains. It usually chooses soft ground in which to burrow. With its spade-armed feet it pushes the soil aside, and by a slow rocking movement sinks backwards beneath the surface of the ground. The heavy skin of the head is probably used to keep the burrow open in front or to pack the earth of the walls of the burrow. The descending toad leaves no trace on the surface to indicate its course.

The feeding habits of the spadefoot are probably similar to those of the eastern representatives of the genus. These come to the surface at night. In Colorado this toad breeds in temporary pools formed by the rains of early summer. Egg masses are elliptical in shape and are attached to submerged vegetation or to any object protruding from the bottom. Its incubation period seems to be less than 48 hours, and the tadpoles develop into adult toads in 36 to 40 days.

Tadpoles are found in roadside mudholes and low areas in fields, the water ranging in depth from a few inches to a few feet. They feed in waters usually poor in vegetable life but rich in crustacea, protozoa, and smaller worms.

The larger tadpoles, at least, seem to live on a strictly carnivorous diet. The structures about the mouth are adapted for seizing and holding their prey, and on the roof of the mouth is a median horny recurving tooth not found in herbivorous tadpoles. The length of the intestine may vary from 2 to 30 inches in tadpoles of the same size. The short intestine is an adaptation to a carnivorous habit. "It seems probable that the spadefoot tadpole is departing from the traditions of its ancestors and relatives and adjusting itself to a new type of diet. This adjustment is approaching perfection in the jaws, lips, roof of the mouth, and jaw muscles. The long intestine character has not been eliminated, but is in process of elimination. It seems to persist during early tadpole life and is later supplanted by a short intestine. The short intestine character will be subject to a wide range of variability until it has firmly established itself on the race." (Loc. Cit. (2), pp. 11 and 12.)

REFERENCES

(1) Barber, M. A., Raquel, A., Guzman, A., and Rosa, A. P.: Malaria in the Philippine Islands. Phil. Jl. Science, Sec. B., vol. 10, No. 3, May 1915, p. 241.
(2) Gilmore, R. J.: Notes on the life history and feeding habits of the spadefoot toad of the western plains. Colorado College Publication. General Series No. 129, Science Series, Vol. XIII, No. 1, Dec. 1924, pp. 1–12.

RECENT POLIOMYELITIS REGULATION OF FLORIDA STATE BOARD OF HEALTH

On November 11, 1927, the State board of health of Florida adopted the following regulation looking to the prevention of the spread of poliomyelitis:

Owing to the greatly increased number of cases of infantile paralysis in a number of States and wishing to protect the children not only of our own State but also those who spend only a part of the year in the State, no children coming from without the State shall be admitted to the schools until they have been in the State for at least two weeks and a certificate of freedom from disease signed by the city health officer or city physician, in cities where there is such official, and for those localities outside such jurisdiction, by a duly qualified physician, must be presented.

Following a case of infantile paralysis, a certificate is required of the patient from either a city or county health officer or from a representative of the State board of health before admittance to school.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Sodium Aluminate as an Adjunct to Alum for the Coagulation of Public Water Supplies. Sheppard T. Powell. *American Journal of Public Health*, vol. 17, No. 8, August, 1927, pp. 804–809. (Abstract by C. T. Butterfield.)

Results obtained with sodium aluminate used in conjunction with alum for the treatment of waters that resisted coagulation are given. The study covers a period of one to two years. The results given are detailed as to methods, analytical data, efficiency of coagulation, and costs. The author summarizes as follows: (1) Possible net saving is effected in plant operation due to reduction in alum doses and to better plant control; (2) the filtered water is less corrosive, due to the lower free CO_2 content; (3) better flocculation in cold water; (4) better agglomeration and more rapid subsidence of the coagulated material; (5) less residual alumina in the filtered water; (6) higher pH values in the filtered water, thereby requiring less lime or soda to raise the reaction to the desired pH for the inhibition of corrosion; (7) possible reduction in subsidence capacities of coagulation and settling basins and reduced mixing periods; (8) longer run between cleaning of filters and reduced wash water as a result of the more efficient coagulation and settling.

Common Faults in Filter Plant Operation. J. L. Barron. *Public Works*, vol. 58, No. 9, September, 1927, pp. 327–330. (Abstract by E. L. Filby.)

A summary of common faults in filter plant operation as applied to small filter plants is given: (1) Trying to do more than operate a plant. Any small plant is worthy of one man's full time; (2) lack of coordination in filtering rate

with service demand, leading to intermittent filtration giving poor results; (3) having only one filter unit; (4) not cleaning settling basins at right time; (5) failure to provide for and maintain the coagulant mat on filters; (6) incomplete washing at low rates; (7) failure to use rate controllers and loss-of-head gauges; (8) tendency to believe chemical solutions and feeds are of proper strength and amounts without testing; (9) lack of daily records and tests; (10) lack of metering devices; (11) failure to recognize that a water plant is a mercantile shop and that attractiveness, courtesy, etc., are good points of salesmanship.

Water Purification at Richmond, Va.—Wellington Donaldson and Frank O. Baldwin. *Public Works*, vol. 58, No. 7, July, 1927, pp. 241–245. (Abstract by H. H. Hasson.)

At Richmond, Va., the water supply is taken from the James River about 5 miles north of the city, diverted through a canal to the filter plant, where the water is purified by a process of sedimentation, coagulation, rapid sand filtration, and aeration.

An unusual feature of the plant is the aeration system. Trouble from tastes and odors indicated that more complete aeration than that ordinarily needed was required. Aeration is obtained by a grid system of cast-iron pipes with a battery of 300 nozzles.

Pollution of the raw water by sulfite wastes is the main factor in the purification treatment. During the low stage of the river the sulfite wastes affect coagulation, and increased doses of alum and chlorine are required. The efficiency of the filters is lowered due to "gumming" of the beds by a sticky substance resulting from coagulation of the colored water. Cleaning the beds once every six months with sodium carbonate and sodium hydroxide is necessary. The presence of sulfite wastes is quite expensive to the city and offers one of the principal problems of plant operation.

Durham's New Water Works. D. M. Williams. *Public Works*, vol. 58, No. 6, June, 1927, pp. 197–203. (Abstract by M. S. Foreman.)

The city of Durham, N. C., in 1921 found that, with an average daily consumption of 3,000,000 gallons, the flow of the Flat River, from which it drew its supply, was inadequate for a considerable period of the year. Hence a dam was built on Flat River, 80 feet high, creating a lake covering 547 acres and containing 4,600,000,000 gallons.

Some of the unusual features of this development are: "(1) Large impounding reservoir for municipal water supply containing 4,600,000,000 gallons; (2) combination pumping and power plant containing vertical generators, horizontal water-wheel-driven pumps, and motor-driven pumps; (3) accessibility for handling all machinery; (4) flexibility of operating pumping units, including steam stations 1 mile away. The pipe connections permit the use of the steam plant 1 mile downstream to pump from the lake with a positive suction head instead of a 20-foot suction lift; (5) underdriven system for relieving upward thrusts; (6) tunnel communication from station through spillway to opposite side of river; (7) electrically operated elevator at top of dam; (8) individual motor and hand operated sluice gates; (9) recording lake and tailrace gauges; (10) floating dock for motor boats; (11) mechanically operated trash rack rakes; (12) stream gauging stations above the lake and in channel below tailrace; (13) preparation for studying silting; (14) rain gauges over entire watershed; (15) evaporation pans for measuring evaporation in lake; (16) wind gauge."

L'Epuration des Eaux D'Egout (The Purification of Sewage). E. Rolants. *Rev. d'Hyg.-et de Med. Preventive.* 1927, v. 49, 196–216. From *Bulletin of Hygiene*, vol. 2, No. 7, July, 1927. p. 553. (Abstracted by C. O. Stallybrass.)

"This is a combined review of a large number of recent papers, mainly from the Surveyor and the Engineering News Records, about 10 of which have already

been reviewed in this Bulletin. (See this Bulletin, v. 1, 604–613 and 898–905.) Rolants notices a tendency to revert to disposal of sewage by irrigation in semi-rural communities, and to the separate digestion of sludge apart from the separating tanks. This method of partial separation which is used in the Imhoff tank is a reversion to the method of Lawrence. The separate treatment of sludge by the activated sludge method is in operation in a number of towns.

"Imhoff has recently made a tour of inspection in the United States. He finds that the higher the temperature the more rapid the separation and the greater the volume of gas evolved. When a separation tank is first brought into use during the early winter an excessive production of scum has been oberved, due to a heavy deposit of undigested sludge, which evolves large quantities of gas in the ensuing spring. When this occurs some of the sludge should be run off.

"Schmrikg has invented a new arrangement of the Imhoff tank in which the partitition between the decantation chamber and the sludge fermentation chamber is in the form of the ridges of a roof which, it would seem, presents considerable advantage.

"The 'Spiroflow' system of treatment by activated sludge as operated at Hanley is described. The installation consists of a series of shallow tanks made of two channels which reunite at each end, thus forming a circuit. At the point of junction there is a paddle and there are baffle plates at intervals along the channels. Each basin opens into the succeeding one by an opening in the partition wall. The combined action of the paddle and the baffle plates causes the sewage to follow a spiral course which facilitates aeration. This permits the suspension of the sludge at a minimun cost—about half the usual cost. The tank for sedimentation after the completion of aeration is provided with means for easily removing the sludge, a portion of which is returned through a valve to the aerating tanks.

"The statement is made that Imhoff proposes to use the gases discharged during the digestion of sludge to produce the force necessary to compress the air in the activated sludge treatment.

"(This paper is well written and provides a readable review of recent progress in sewage treatment, more especially in Great Britain and the United States.)"

Sur Le Mecanisme de L'Epuration des Eaux D'Egout Par Les Boues Activees. (Mechanism of Sewage Purification by Activated Sludge.) F. Dienert. *Ann. d'Hyg. Pub. Indust. et Sociale*, 1926, v. 4, 732–43. From *Bulletin of Hygiene*, vol. 2, No. 7, July, 1927, p. 551. (Abstracted by C. O. Stallybrass.)

"This is a careful description of the mode of action of activated sludge, based apparently on the author's own experience and experiments. It is necessary that the sludge should consist mainly of organic matter; either too heavy or too light a sludge will not work well; the sewage should be first well decanted from mineral matters.

"The author describes the method of producing an activated sludge that will give a clear effluent in which ammonia has been replaced by nitrates. This will take 15 to 20 days to obtain; at first fresh quantities of sewage are admitted to the tank and aerated by blowing in air until about 5 per cent of the sewage remains in the tank as sludge. The next batch of sewage is aerated continuously for 8 or 10 days. It is then necessary to decant the effluent in a second tank and pump the sludge back into the first tank. After this it is only needful to regulate the time that the sewage remains in the tank in accordance with the strength of the sewage in order invariably to obtain a clear imputrescible effluent. The stronger the sewage the greater the amount of air that must be blown in. The amount of ammonia destroyed is often greater than the nitrates produced, so that some

nitrogen is either absorbed in the sludge or given off into the atmosphere. Addition of phenol will stop this oxidizing activity of the sludge, which is clearly due to the agency of bacteria.

"A description is given of the method of making activated sludge with manganese dioxide. From this can be obtained an 'activated casein' which will act on milk and oxidize lactose, but not milk proteins. Nevertheless the effluent is imputrescible; the casein is precipitated at the rate of 0.32 gm. per liter per day.

"If the sewage is rich in colloidal organic matters it is slightly viscous; this renders the precipitation of the sludge very slow. Bacterial action is necessary to effect rapid precipitation; this is effected either by the production of coagulase or of acids. The colloidal substances then become oxidized and can not again be suspended.

"Activated sludge is composed of organic substances which have not been broken down to the same extent as have those in bacterial beds. A sterilized activated sludge treated with a sludge from a bacterial bed produces indol and considerable quantities of amino acids; this does not occur with the bacterial bed sludges by themselves.

"The presence of antiseptic substances or of sulphuretted hydrogen will slow down the rate of action of the sludge. 'Bulking' is the term applied to the production of excessive quantities of sludge due to the growth of protozoa and of a species of Cladothrix; it occurs in hot weather. These troubles require a more prolonged aeration than normally. A badly aerated sludge loses its activity. Aeration must also be proportionate to the amount of organic matter to be transformed, and in some cases dilution may be necessary.

"When the pH of the sewage falls below 6.0 then the microbic felt work disappears and the sludge becomes inactive."

Sewage Chlorination at Fort Worth, Tex. W. S. Mahlie. *Public Works*, vol. 58, No. 7, July 1927, pp. 264–265. (Abstract by H. H. Hasson.)

At Fort Worth a set of experiments was started to determine what advantage there was in chlorination of sprinkling filter effluent prior to its entering the secondary settling tanks (with Dorr clarifiers) over the customary method of chlorinating the effluent from the secondary settling tanks.

It was found that in the clarifier when not prechlorinated there was an increase in total bacteria and *B. coli* were greatly reduced. There was, also, under the system of the clarifier receiving chlorinated effluent, a decrease in suspended matter leaving the secondary settling tanks, a retardation of free ammonia during passage through clarifiers, an increased removal of total organic nitrogen, a retention of stability due to a prevention of loss of nitrate nitrogen, a lowered oxygen consumed value, an increase in dissolved oxygen, and the elimination of algæ in the clarifiers.

Disposal of Drainage from Coal Mines. Andew B. Crichton. *Water Works*, vol. 66, No. 1, January 1927, pp. 30–34. (Abstract by E. A. Reinke.)

Coal-mine drainage waters contain sulphuric acid in such quantities that the alkalinity of 80 to 100 gallons of fresh water is necessary to neutralize the acidity of 1 gallon of waste. Coal is produced in 28 States at a rate of 550,000,000 tons annually, and the industry employs 850,000 men. The pollution is most acute in West Virginia, Pennsylvania, and Ohio. Many water supplies in Pennsylvania have been abandoned due to mine drainage pollution. The Sanderson case dating back to 1886, is summarized. In this case the courts held that trifling inconvenience to individual riparian owners must give way to a leading industrial interest of the State.

The Indian Creek pollution suit is also summarized. In this case a water company serving 75,000 people and the Pennsylvania Railroad obtained an injunction, which was sustained by the United States Supreme Court, prohibiting the dis-

charge of mine drainage into Indian Creek above their diversion, on the ground of public nuisance being created. In this case a public use of the water was shown and no other supply was available.

The character and composition of various mine drainage waters is given and analyses shown in tables. The occurrence of water in mines is described. Methods of treatment and costs are given. The cost to neutralize (but not redeem) streams in Pennsylvania alone is estimated at $75,000,000 for plants and $41,062,500 to $68,437,500 annually for operation.

The author suggests that any solution must be economically sound and commends the policy of the Pennsylvania Department of Health, which is to protect all unpolluted streams; to stop further pollution of all streams that can be restored; and to use those now destroyed for carrying sewage, industrial wastes, and mine drainage.

The North Carolina Sanitary Privy Law. G. M. Cooper. *Southern Medical Journal*, vol. 20, No. 8, August, 1927, pp. 655–657. (Abstract by A. L. Dopmeyer.)

The State sanitary privy law of North Carolina was passed on February 24, 1919. This article gives a copy of the law and shows methods used and results obtained in its enforcement.

The law requires the construction of an approved type of sanitary privy at every residence in North Carolina within 300 yards of any other residence. The success of this work is attributed to the fact that the law was actually enforced and by a suitable enforcement officer. The courts have universally upheld the enforcement of the law.

The property owner is given a choice of several types of privies. At present there are in use over 100,000 earth pit privies. Eighty-two per cent of all the privies under the jurisdiction of the State law are pits, which are built at an average cost of $22.50 each. The law has been enforced at an average cost of about 68 cents per privy. More than 184,000 open surface privies have been eliminated since the law was enacted, 130 new sewerage systems have been installed in the smaller towns, as well as 126 new public water supplies. About 50,000 open-surface privies have been eliminated by extensions to town sewerage system.

Sewage Disposal of the City of Manila. Santiago Artiaga and M. Manos. *Unitas*, Official Organ of University of Santo Tomas, vol. 6, No. 1, July 15, 1927, pp. 16–26. (Abstract by H. B. Foote.)

The city, which is quite level, has been divided into seven zones. Each zone is independent of the others. In these zones there are several collection wells and pumping stations collecting the sewage and discharging it in series from one to the next until it finally reaches one such station located on the shore line at the end of Azcarraga Street, which pumps the entire flow into Manila Bay one and one-fourth miles from shore.

The laterals or street sewers (8 inches in diameter) start at a minimum of 5 feet in depth and slope to the submains (10 to 24 inches in diameter). These have an average covering of 10 feet and slope directly to the pumping stations or to mains. The main pipes connecting the various pump stations vary in shape and in size from 2 feet 3 inches by 3 feet 4 inches oval to 5 feet circular at the lower end. At the upper ends they start from about 15 feet in depth and discharge by gravity into the various deep wells.

The sewage is all pumped by electric motor and centrifugal pump. An inverted siphon through the bottom of the Pasig River carries the flow from the south side to the north.

The whole system includes approximately 65 miles of pipes, 7.5 miles of which are built of concrete and brick, 2.5 miles of 2 and 3 feet egg-shaped sewer and

55 miles, approximately, of vitrified pipe from 8 to 24 inches. It has been in use since 1908 and has been very successful in operation. There is no other treatment of the sewage than dilution.

A Study of the Pollution and Natural Purification of the Illinois River. I. Surveys and Laboratory Studies. J. K. Hoskins, C. C. Ruchhoft, and L. G. Williams. U. S. Public Health Service Bulletin No. 171, May, 1927. 208 pages. (Abstract by J. K. Hoskins.)

In pursuance of its policy in research investigations of the phenomena of stream pollution and rates of natural purification of polluted water, the United States Public Health Service, in cooperation with the Sanitary District of Chicago instituted a study of the Illinois River, the field work of which was carried out during the years 1921–22. Surveys were made to ascertain the sources and amounts of polluting materials discharged to the stream. Hydrographic features of the river and its principal tributaries were ascertained and observations were made over a period of about a year to determine the chemical, bacteriological and biological condition of the river water throughout the stream length. The present report discusses the sources and extent of pollution and presents the base data collected in the form of monthly average results, describes the methods adopted in their collection and discusses the outstanding features which they portray.

Laundry Wastes in Sewage. I. R. Riker. *Public Works*, vol. 58, No. 9, September, 1927, pp. 337–339. (Abstract by E. L. Filby.)

Increased Monday flows in sewers, largely due to laundering, gave poor sewage plant effluents until Tuesday noon. Laundry wastes are much stronger than sewage—oxygen consumed 277 p. p. m. Oaklyn, N. J., a plant having coarse bar screens, Imhoff tank, sprinkling filter, final settling basins, chlorination and sludge drying beds, operated satisfactorily, for two years until a wet wash laundry connected thereto. Tests showed poor operation, while laundry was in operation and tendency of effluent to improve last of week when laundry was not in operation. Laundry wastes ordered out of sanitary sewers. Laundry should use acid alum treatment before discharge into sanitary sewers.

Ueber Die Neueren Verfahren der Abwasserbeseitigung. (The Newer Methods of Sewage Treatment.) P. Kuhn. (*Gesundheits-Ingenieur.* 1927, v. 50, 209–19.) From *Bulletin of Hygiene*, vol. 2, No. 7, July 1927. (Abstracted by M. E. Delafield.) P. 550.

"The more important aspects of the newer methods of sewage treatment are reviewed. Dealing first with the activated sludge process, which was introduced into Germany only after its success in England and America, the early methods of using only compressed air are described shortly. Developed out of this were the mechanical agitation methods of paddle wheels, of scoops, and by whirling.

"The process was first used at Bergedorf in 1915. Since then it has been used at Essen-Rellinghausen and elsewhere. A development introduced by Bach was to employ tanks filled with some contact material and then to aerate from below. In this way strong sewages containing trade and gas works wastes are delt with adequately and even phenol is got rid of. The general difficulty of the disposal of the surplus sludge is referred to and mention made of its use as a food for fishes. A suggestion is also made to use artificial aeration to purify foul streams.

"It has long been the practice in certain parts of Germany to lead sewage wastes into special ponds in which fish such as carp are kept to convert the waste matters into human food.

"The disinfection of sewage with chlorine as an emergency measure, the treatment of dye-works wastes, and the production of gas for power purposes from sewage are mentioned.

"The general aspects of sewage purification are reviewed particularly with reference to the growing pollution of streams and the consequent expense of sewage treatment. Particular stress is also laid on the problem of recovering the valuable substances in sewage which in existing methods of treatment are lost as sludge and effluent."

Fate of Grease in Sludge Digestion. S. L. Neave with A. M. Buswell. Ind. Eng. Chem. 19, 1012–4 (1927). From *Chemical Abstracts*, vol. 21, No. 20, October 20, 1927, p. 3409. (Abstracted by J. A. Kennedy.)

In the acid type of sludge digestion, a rapid destruction of grease and Ca soaps occurs with the production of lower fatty acids. Some of the lower fatty acids ferments further to give methane. Proteolysis is hindered by the low pH and, as a result, the sludge is not digested. The rate of fermentation, as measured by gas production, is roughly proportional to the grease content of the solids, a scum high in grease being the most vigorous gas producer. Cellulose is believed to undergo little, if any, digestion during the ordinary sludge-digestion period."

The Sanitary Privy. W. R. Culbertson. *Southern Medical Journal*, vol. 20, No. 8, August, 1927, pp. 657–662. (Abstract by A. L. Dopmeyer.)

This article gives detailed information concerning the design and construction of the various types of sanitary privies in use. The types discussed are: (1) Common pit type; (2) double wood slab pit; (3) reinforced concrete slab; (4) concrete vault; (5) Kentucky type septic; (6) box and can; (7) chemical commode.

A galvanized sheet iron privy seat and riser which may be used with any type of sanitary privy is also described. There is also a sketch showing construction of a sanitary privy.

Following this article are discussions by a number of health officials from various parts of the country.

Milk Production Regulations. Anon. *Sanitary Bulletin*, Buffalo, N. Y. Department of Health, January, 1927, pp. 5–6. (Abstract by J. R. Hoffert.)

This article covers 30 specific regulations including provisions for: Exclusion of milk from dairy farm where case of contagious disease exists except under prescribed conditions; licensed veterinarians' examination of cows at least annually with filing or reports; conditions of milking, including cleansing of udders, cleanliness of attendants' clothing and milking equipment; sanitary quality of water and food of cows; specified barn conditions including tight floors and ceiling, amount of air space, window area, ventilation, whitewashing, cleaning, removal of manure, etc.; requires certain conditions for milk house, milk cooler and cooling tank and in operation of cooler; specifies small topped milk pails, straining and cleansing of milking equipment, including sterilization of milking machines.

DEATHS DURING WEEK ENDED DECEMBER 17, 1927

Summary of information received by telegraph from industrial insurance companies for week ended December 17, 1927, and corresponding week of 1926. (From the Weekly Health Index, December 21, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Dec. 17, 1927	Corresponding week, 1926
Policies in force	69, 626, 833	66, 290, 845
Number of death claims	12, 573	12, 729
Death claims per 1,000 policies in force, annual rate	9. 4	10. 0

Deaths from all causes in certain large cities of the United States during the week ended December 17, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, December 21, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week, ended Dec. 17, 1927		Annual death rate per 1,000 corresponding week, 1926	Deaths under 1 year		Infant mortality rate, week ended Dec. 17, 1927[2]
	Total deaths	Death rate[1]		Week ended Dec. 17, 1927	Corresponding week, 1926	
Total (67 cities)	7,109	12.7	[3] 13.1	709	[3] 791	[4] 68
Albany[5]	57	24.8	16.3	5	1	104
Atlanta[6]	86	18.0	13.7	10	5	
White	48	14.3	8.8	6	2	
Colored	38	26.8	25.1	4	3	
Baltimore[6]	207	13.2	14.3	21	24	67
White	162	12.1	12.3	16	16	64
Colored	45	19.5	26.3	5	8	78
Birmingham[6]	66	15.8	13.6	9	10	
White	28	11.0	11.4	1	4	
Colored	38	23.4	17.0	8	6	
Boston	217	14.3	13.8	19	31	53
Bridgeport	38			2	5	34
Buffalo	146	13.8	12.2	14	12	59
Cambridge	20	8.4	12.0	1	8	18
Camden	34	13.3	14.7	1	9	17
Canton	24	11.1	13.3	1	3	24
Chicago[5]	679	11.4	11.9	78	64	68
Cincinnati	150	19.0	16.1	7	9	42
Cleveland	189	10.0	10.0	22	16	59
Columbus	64	11.5	17.0	7	7	65
Dallas[6]	50	12.3	12.8	10	5	
White	41	11.6	11.5	9	5	
Colored	9	17.1	21.5	1	0	
Denver	101	18.2	16.4	9	15	
Des Moines	35	12.2	14.3	3	6	53
Detroit	249	9.7	11.1	41	48	63
Duluth	16	7.3	11.1	2	6	43
El Paso	44	20.1	12.4	4	6	
Erie	28			1	5	21
Fall River[5]	32	12.5	13.1	4	6	68
Flint	27	9.8	15.3	5	16	79
Fort Worth[6]	29	9.2	12.4	2	3	
White	27	9.8	12.7	2	2	
Colored	2	5.3	10.8	0	1	
Grand Rapids	29	9.5	10.7	5	6	74
Houston[6]	45			8	4	
White	25			7	4	
Colored	20			1	0	
Indianapolis[6]	86	12.0	14.8	6	7	46
White	71	11.2	14.0	6	5	52
Colored	15	17.3	20.4	0	2	0
Jersey City	62	10.0	10.2	6	6	45
Kansas City, Kans.[6]	30	13.3	11.2	2	1	42
White	24	13.0	11.9	1	1	25
Colored	6	14.8	7.6	1	0	145
Kansas City, Mo.	94	12.8	16.1	10	9	
Knoxville[6]	25	12.8		7		
White	22	12.8		7		
Colored	3	12.8		0		
Los Angeles	258			28	31	80
Louisville[6]	82	13.4	14.4	3	4	26
White	61	11.7	12.3	2	3	19
Colored	21	22.4	26.4	1	1	69
Lowell	26	12.3	10.4	1	1	21
Lynn	18	8.9	12.5	3	1	83
Memphis[6]	65	18.9	19.5	5	9	
White	33	14.9	13.3	3	2	
Colored	32	26.3	30.6	2	7	
Milwaukee	136	13.4	10.8	16	19	74
Minneapolis	123	14.5	12.1	8	6	45

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 66 cities.
[4] Data for 60 cities.
[5] Deaths for week ended Friday, Dec. 16, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta 31, Baltimore, 15, Birmingham 39, Dallas 15, Fort Worth, 14, Houston 25, Indianapolis 11, Kansas City (Kans.) 14, Knoxville 15, Louisville 17, Memphis 38, Nashville 30, New Orleans 26, and Richmond 32.

Deaths from all causes in certain large cities of the United States during the week ended December 17, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, December 21, 1927, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week, ended Dec. 17, 1927		Annual death rate per 1,000 corresponding week, 1926	Deaths under 1 year		Infant mortality rate, week ended Dec. 17, 1927
	Total deaths	Death rate		Week ended Dec. 17, 1927	Corresponding week, 1926	
Nashville [6]	54	20.4	17.1	4	4	
White	40	21.1	14.9	3	1	
Colored	14	18.8	22.7	1	3	
New Bedford	22	9.6	8.7	3	2	57
New Haven	37	10.4	13.2	2	4	28
New Orleans [6]	179	22.0	20.3	27	14	
White	104	17.3	15.1	10	8	
Colored	75	35.5	34.9	17	6	
New York	1,352	11.8	13.4	113	161	47
Bronx Borough	170	9.6	10.0	13	17	41
Brooklyn Borough	459	10.5	12.8	39	58	41
Manhattan Borough	552	15.9	17.5	51	66	61
Queens Borough	138	8.9	8.7	9	16	39
Richmond Borough	33	11.7	15.7	1	4	19
Newark, N. J	104	11.6	10.2	10	14	50
Oakland	72	14.1	10.4	4	6	47
Oklahoma City	21			3	4	
Omaha	70	16.7	14.0	8	6	91
Paterson	40	14.5	12.8	4	5	72
Philadelphia	492	12.6	13.2	50	46	67
Pittsburgh	191	15.5	14.4	27	25	94
Portland, Oreg	63			3	2	32
Providence	46	8.5	11.2	8	5	69
Richmond [6]	57	15.5	14.6	11	8	143
White	34	13.0	13.6	4	4	81
Colored	23	21.6	16.9	7	4	256
Rochester	64	10.3	10.1	9	5	76
St. Louis	218	13.6	13.8	16	15	
St. Paul	58	12.1	12.2	2	2	18
Salt Lake City [5]	42	16.1	10.9	4	8	64
San Antonio	61	15.1	10.2	14	11	
San Diego	49	22.2	24.1	2	3	44
San Francisco	148	13.4	14.2	11	6	69
Schenectady	17	9.5	14.0	1	7	30
Seattle	87			8	10	85
Somerville	7	3.6	15.1	1	1	29
Spokane	41	19.8	11.5	2	1	48
Springfield, Mass	30	10.6	13.3	2	5	32
Syracuse	48	12.7	14.9	5	3	65
Tacoma	37	18.0	14.3	3	1	70
Toledo	76	13.0	13.2	6	11	57
Trenton	42	16.0	13.2	5	6	89
Utica	27	13.7	18.3	1	3	23
Waterbury	16			2	1	47
Wilmington, Del	27	11.2	8.8	1	4	25
Worcester	48	12.8	14.3	3	5	36
Yonkers	24	10.5	15.7	2	6	46
Youngstown	31	9.6	12.0	1	9	13

[5] Deaths for week ended Friday, Dec 16, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta 31, Baltimore 15, Birmingham 39, Dallas 15, Fort Worth 14, Houston 25, Indianapolis 11, Kansas City (Kans.) 14, Knoxville 15, Louisville 17, Memphis 38, Nashville 30, New Orleans 26, and Richmond 32.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks Ended December 25, 1926, and December 24, 1927

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 25, 1926, and December 24, 1927

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927	Week ended Dec. 25, 1926	Week ended, Dec. 24, 1927
New England States:								
Maine	1	12	4	6	78	72	0	0
New Hampshire								
Vermont					23		0	0
Massachusetts	104	138	14	11	59	535	2	4
Rhode Island	1	31	6		2	10	0	0
Connecticut	18	41	2	15	29	35	1	0
Middle Atlantic States:								
New York	228	380	[1] 50	[1] 21	589	318	6	4
New Jersey	78	133	11	7	21	54	0	2
Pennsylvania	189	166			413	256	1	3
East North Central States:								
Ohio		77		10		109		1
Indiana	28	35	19	19	72	42	1	0
Illinois	110	219	37	43	577	33	3	9
Michigan	63	73		6	66	174	0	1
Wisconsin	45	49	20	70	588	106	1	1
West North Central States:								
Minnesota	34	17		1	142	3	0	1
Iowa [2]	30	22			46	6	2	0
Missouri [4]	46	46	2	4	74	18	0	3
North Dakota	11				94		0	
South Dakota	1	1	1	2	35	13	1	1
Nebraska	6	20		2	13		0	0
Kansas	19	31	6	8	34	24	0	1
South Atlantic States:								
Delaware		4	2			2	0	0
Maryland [2]	48	38	42	23	27	105	2	0
District of Columbia	27				1		0	
Virginia								
West Virginia	33	26	30	14	103	48	0	0
North Carolina	86				36		1	
South Carolina	41	25	843	339	9	520	0	0
Georgia	45	15	27	86	17	63	0	1
Florida	30	14	3	4	8	5	1	2
East South Central States:								
Kentucky								
Tennessee	18	11	55	49	4	55	1	0
Alabama	59	18	19	49	17	43	0	0
Mississippi	15	25					1	
West South Central States:								
Arkansas	8	33	35	61	1	16	0	0
Louisiana	17	57	11	30	24	53	0	0
Oklahoma [3]	28	37	121	80	9	31	0	2
Texas	52	104	22	83	9	55	0	0
Mountain States:								
Montana	7	2			73	1	0	1
Idaho	3	5			57	1	0	1
Wyoming	1				5		0	2
Colorado	9	21		1	4	16	1	1
New Mexico	1	5		1	5	25	0	0
Arizona	3	3				2	0	0
Utah [2]	2	7			179	2	0	0

[1] New York City only.
[2] Week ended Friday.
[3] Exclusive of Tulsa.
[4] 1927 figures exclusive of Kansas City.

Reports for Weeks Ended December 25, 1926, and December 24, 1927—Con.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 25, 1926, and December 24, 1927—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927
Pacific States:								
Washington	23	11			117	138	1	5
Oregon	12	11	15	18	32	7	1	2
California	99	114	11	13	460	17	2	0

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927	Week ended Dec. 25, 1926	Week ended Dec. 24, 9127	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927
New England States:								
Maine	0	2	42	36	0	0	1	15
New Hampshire								
Vermont	0	0	4	6	0	0	0	0
Massachusetts	1	11	236	227	0	0	31	6
Rhode Island	0	0	7	38	0	0	0	1
Connecticut	1	0	60	65	0	0	2	2
Middle Atlantic States:								
New York	2	5	392	382	6	10	16	17
New Jersey	0	1	127	106	0	2	1	4
Pennsylvania	2	4	405	289	1	0	19	10
East North Central States:								
Ohio		3		165		15		12
Indiana	0	1	103	45	79	48	4	3
Illinois	0	3	234	267	20	12	16	18
Michigan	0	5	154	140	19	27	1	7
Wisconsin	0	0	136	144	6	30	6	1
West North Central States:								
Minnesota	1	1	207	135	8	2	2	1
Iowa [2]	0	3	27	60	6	100	1	3
Missouri	0	2	91	88	3	41	4	8
North Dakota	0		64		6		0	
South Dakota	0	2	27	54	4	1	0	1
Nebraska	0	1	47	28	9	6	0	3
Kansas	0	1	77	145	29	30	1	10
South Atlantic States:								
Delaware	0	0	14	4	0	0	2	0
Maryland [2]	0	0	68	26	0	0	11	9
District of Columbia	0		14		0		1	
Virginia								
West Virginia	0	0	59	53	1	23	16	19
North Carolina	0		74		19		6	
South Carolina	0	3	19	20	11	3	12	13
Georgia	0	0	16	10	76	0	6	15
Florida	0	0	13	8	39	2	4	1
East South Central States:								
Kentucky								
Tennessee	0	0	21	16	6	3	21	10
Alabama	3	1	19	16	82	4	52	6
Mississippi	0	0	9	14	32	0	5	1
West South Central States:								
Arkansas	0	0	9	22	1	1	3	9
Louisiana	1	1	9	16	1	0	6	9
Oklahoma [3]	1	0	50	27	35	54	13	11
Texas	0	6	38	98	24	7	1	26
Mountain States:								
Montana	0	1	103	13	10	16	3	0
Idaho	0	0	42	9	1	1	1	1
Wyoming	0	0	2	15	0	3	0	0
Colorado	0	1	31	94	1	12	0	5
New Mexico	0	2	15	15	0	0	3	0
Arizona	0	1	3	3	1	2	1	0
Utah [2]	0	0	4	6	0	18	0	0
Pacific States:								
Washington	0	7	91	50	38	23	4	2
Oregon	0	10	32	22	17	34	1	3
California	0	7	138	132	9	11	15	10

[2] Week ended Friday.

[3] Exclusive of Tulsa.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
November, 1927										
Georgia	0	178	287	145	86	20	9	112	7	85
Indiana	5	245	62		44		27	481	287	27
Iowa	3	96	1		7		17	227	185	12
Maryland	1	177	107	1	206	1	6	223	0	72
Minnesota	4	240	7		16		16	632	5	24
New York	14	1,515		14	738		78	1,280	35	204
Ohio	3	987	41	1	193		121	1,013	46	109
West Virginia	3	99	69		48		34	238	18	62
Wyoming	0	8	3		33		1	88	33	3

November, 1927

	Cases
Actinomycosis:	
Iowa	1
Anthrax:	
New York	1
Chicken pox:	
Georgia	58
Indiana	272
Iowa	180
Maryland	378
Minnesota	678
New York	1,840
Ohio	1,473
West Virginia	179
Wyoming	112
Conjunctivitis:	
Georgia	4
Dengue:	
Georgia	3
Dysentery:	
Georgia	13
Iowa	1
Maryland	5
Minnesota	1
New York	9
Ohio	5
German measles:	
Georgia	1
Iowa	7
Maryland	7
New York	88
Ohio	35
Wyoming	1
Hookworm disease:	
Georgia	10
Impetigo contagiosa:	
Iowa	4
Maryland	20
Lead poisoning:	
Ohio	6
Lethargic encephalitis:	
Maryland	4
Minnesota	1
New York	24
Ohio	2
Mumps:	
Georgia	21
Indiana	16
Iowa	143
Maryland	53
New York	985

	Cases
Mumps—Continued.	
Ohio	514
Wyoming	4
Ophthalmia neonatorum:	
Maryland	1
New York	7
Ohio	111
Paratyphoid fever:	
Georgia	1
New York	3
Puerperal fever:	
New York	5
Rabies in animals:	
Maryland	3
New York	6
Scabies:	
Maryland	1
Wyoming	4
Septic sore throat:	
Georgia	48
Iowa	2
Maryland	15
New York	5
Ohio	83
Tetanus:	
Maryland	1
Minnesota	1
New York	5
Trachoma:	
New York	5
Ohio	24
Tularaemia:	
Minnesota	1
Typhus fever:	
Georgia	1
New York	1
Vincent's angina:	
Maryland	9
New York	117
Whooping cough:	
Georgia	12
Indiana	86
Iowa	25
Maryland	110
Minnesota	38
New York	1,511
Ohio	403
West Virginia	32
Wyoming	74

Number of Cases of Certain Communicable Diseases Reported for the Month of October, 1927, by State Health Officers

	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Alabama	25	551	89	29	133	9	341	183	119
Arizona	11	50	8	6	10	0	226	21	3
Arkansas	45	90	49	160	68	8	[1] 41	127	47
California	639	499	199	249	485	22	747	49	396
Colorado	13	89	25	15	175	1	87	59	53
Connecticut	220	143	47	66	114	0	154	18	157
Delaware [3]	-------	-------	-------	-------	-------	-------	-------	-------	-------
District of Columbia	22	92	8	-------	63	0	92	10	23
Florida	3	181	5	9	33	22	68	52	20
Georgia	17	240	55	24	151	18	78	138	34
Idaho	47	11	7	96	59	47	[1] 3	5	12
Illinois	563	587	99	279	677	39	974	163	694
Indiana [2]	-------	-------	-------	-------	-------	-------	-------	-------	-------
Iowa	76	59	12	40	148	84	37	14	34
Kansas	263	216	146	32	392	80	172	74	214
Kentucky [3]	-------	-------	-------	-------	-------	-------	-------	-------	-------
Louisiana	9	163	15	4	43	13	[1] 164	68	4
Maine	92	10	218	15	158	0	17	30	80
Maryland	124	142	69	22	133	0	191	114	103
Massachusetts	412	432	526	181	728	0	485	48	341
Michigan	197	403	144	237	489	38	523	77	442
Minnesota	291	250	17	-------	396	5	308	30	83
Mississippi	250	421	632	195	174	46	288	102	997
Missouri	145	334	29	77	428	70	240	137	251
Montana	92	15	12	4	65	79	37	7	30
Nebraska	80	60	6	44	168	8	24	12	32
Nevada [4]	-------	-------	-------	-------	-------	-------	-------	-------	-------
New Hampshire	-------	17	-------	-------	44	0	-------	3	-------
New Jersey	319	566	64	-------	272	0	403	39	378
New Mexico [2]	-------	-------	-------	-------	-------	-------	-------	-------	-------
New York	865	292	422	596	468	18	1,346	124	1,062
North Carolina	98	717	749	-------	535	41	-------	88	566
North Dakota	76	41	27	26	159	12	6	9	6
Ohio	646	779	113	232	842	50	551	159	375
Oklahoma [5]	41	609	108	6	201	57	109	398	73
Oregon	95	57	52	49	91	94	44	69	23
Pennsylvania [2]	-------	-------	-------	-------	-------	-------	-------	-------	-------
Rhode Island	10	61	11	15	94	4	45	6	5
South Carolina	34	591	595	-------	143	14	194	233	248
South Dakota	19	23	26	28	126	45	5	18	7
Tennessee	31	289	232	27	292	35	245	362	193
Texas [2]	-------	-------	-------	-------	-------	-------	-------	-------	-------
Utah [3]	-------	-------	-------	-------	-------	-------	-------	-------	-------
Vermont	117	14	16	43	53	0	12	4	103
Virginia	281	507	291	-------	358	14	[1] 62	125	292
Washington	248	79	206	135	203	63	152	23	60
West Virginia	86	125	37	-------	344	22	55	205	188
Wisconsin	425	143	252	169	368	52	162	30	315
Wyoming	31	12	45	8	54	2	-------	9	47

[1] Pulmonary.
[2] Report not received at time of going to press.
[3] Reports received weekly.
[4] Reports received annually.
[5] Exclusive of Oklahoma City and Tulsa.

Case Rates per 1,000 Population (Annual Basis) for the Month of October, 1927

	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Alabama	0.12	2.55	0.41	0.13	0.61	0.04	1.58	0.85	0.55
Arizona	.28	1 28	.21	.15	.26	0.	5.80	.54	.08
Arkansas	.28	.55	.30	.98	.42	.05	[1].25	.78	.29
California	1.70	1.33	.53	.66	1.29	.06	1.98	.13	1.05
Colorado	.14	.98	.27	.16	1.92	.01	.95	.65	.58
Connecticut	1.58	1.03	.34	.48	.82	0.	1.11	.13	1.13
Delaware [2]									
District of Columbia	.48	2.01	.17	-------	1.37	0.	2.01	.22	.50
Florida	.03	1.56	.04	.08	.29	.19	.59	.45	.17
Georgia	.06	.89	.20	.09	.56	.07	.29	.51	.13
Idaho	1.04	.24	.15	2.12	1.30	1.04	[1].07	.11	.26
Illinois	.91	.95	.16	.45	1.09	.06	1.57	.26	1.12
Indiana [3]									
Iowa	.37	.29	.06	.19	.72	.41	.18	.07	.17
Kansas	1.69	1.39	.94	.21	2.52	.52	1.11	.48	1.38
Kentucky [3]									
Louisiana	.05	.99	.09	.02	.26	.08	[1] 1.00	.41	.02
Maine	1.37	.15	3.24	.22	2.35	0	.25	.45	1.19
Maryland	.91	1.05	.51	.16	.98	0	1.41	.84	.76
Massachusetts	1.14	1.20	1.46	.50	2.02	0	1.35	.13	.95
Michigan	.52	1 06	.38	.62	1.28	.10	1.37	.20	1.16
Minnesota	1.28	1.10	.07	-------	1.74	.02	1.35	.13	.36
Mississippi	1.64	2 77	4.16	1 28	1.14	.30	1.89	.67	6.56
Missouri	.49	1.12	.10	.26	1.44	.23	.80	.46	.84
Montana	1.52	.25	.20	.07	1.07	1.30	.61	.12	.49
Nebraska	67	.51	.05	.37	1.42	.07	.20	10	.27
Nevada [4]									
New Hampshire	-------	.44	-------	-------	1.14	0	-------	.08	-------
New Jersey	1.00	1.78	20	-------	.85	0	1.27	.12	1.19
New Mexico [2]									
New York	.89	.30	.44	.61	.48	.02	1.39	.13	1.09
North Carolina	.40	2.91	3.04	-------	2.17	.17	-------	36	2.30
North Dakota	1.40	.75	50	48	2.92	22	.11	.17	.11
Ohio	1.13	1.37	.20	.41	1.48	.09	.97	.28	.66
Oklahoma [5]	.23	3.38	.60	.03	1.11	.32	.60	2.21	.40
Oregon	1 26	.75	.69	65	1.20	1 24	.58	.91	.30
Pennsylvania [2]									
Rhode Island	.17	1.02	.18	.25	1.57	07	.75	.10	.08
South Carolina	.22	3.77	3.80	-------	91	09	1.24	1.49	1.58
South Dakota	.32	.39	.44	.47	2 13	.76	.08	.30	.12
Tennessee	.15	1.37	1.10	.13	1.38	.17	1.16	1.72	.91
Texas [2]									
Utah [3]									
Vermont	3.91	.47	53	1.44	1 77	0.	.40	.13	3.44
Virginia	1 30	2.34	1 35	-------	1.66	.06	[1].29	.58	1.35
Washington	1.87	60	1.55	1.02	1.53	47	1.15	.17	38
West Virginia	.60	87	.26	-------	2 39	.15	.38	1.42	1.31
Wisconsin	1.71	58	1.02	.68	1.48	21	.65	.12	1 27
Wyoming	1.51	.59	2.20	.39	2.64	.10	-------	.44	2.30

[1] Pulmonary.
[2] Report not received at time of going to press
[3] Reports received weekly.
[4] Reports received annually.
[5] Exclusive of Oklahoma City and Tulsa.

RECIPROCAL NOTIFICATIONS

Notifications regarding communicable diseases sent during the month of November, 1927, to other State health departments by departments of health of certain States

Referred by—	Diphtheria	Measles	Poliomyelitis	Scarlet fever	Smallpox	Tuberculosis	Typhoid
California					1		
Connecticut	1						1
Illinois			1				2
Massachusetts							5
Minnesota	2					50	[1]5
New York	1			3			1
Ohio			1				

[1] One of these cases was a carrier.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 98 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,450,000. The estimated population of the 94 cities reporting deaths is more than 30,260,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended December 10, 1927, and December 11, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
42 States	2,539	2,429	
98 cities	1,196	1,164	1,257
Measles:			
41 States	4,649	5,698	
98 cities	1,291	1,042	
Poliomyelitis:			
42 States	152	31	
Scarlet fever.			
42 States	3,473	4,116	
98 cities	1,069	1,356	1,102
Smallpox:			
41 States	730	679	
98 cities	64	63	48
Typhoid fever:			
42 States	344	467	
98 cities	62	73	65
Deaths reported			
Influenza and pneumonia:			
94 cities	709	832	
Smallpox:			
94 cities	0	0	

City reports for week ended December 10, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during non-epidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

City reports for week ended December 10, 1927—**Continued.**

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria: Cases, estimated expectancy	Diphtheria: Cases reported	Influenza: Cases reported	Influenza: Deaths reported	Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
NEW ENGLAND									
Maine.									
Portland	75,333	0	2	1	1	0	2	0	0
New Hampshire:									
Concord	22,546	0	0	0	0	0	3	0	1
Manchester	83,097	1	4	0	0	0	0	0	0
Nashua	29,723		0	1	0	0	1		0
Vermont									
Barre	10,008	1	0	0	0	0	0	0	0
Massachusetts									
Boston	779,620	58	54	29	3	2	185	3	6
Fall River	128,993	2	5	3	0	0	0	0	1
Springfield	142,065	10	5	14	0	0	0	3	1
Worcester	190,757	12	4	10	0	0	1	43	0
Rhode Island									
Pawtucket	69,760	0	2	2	0	0	0	4	0
Providence	267,918	9	10	20	0	1	8	4	6
Connecticut·									
Bridgeport	(1)	0	10	7	0	1	0	0	2
Hartford	160,197	1	8	7	0	0	1	1	4
New Haven	178,927	15	4	0	0	0	32	6	1
MIDDLE ATLANTIC									
New York·									
Buffalo	538,016	66	24	34		1	60	26	10
New York	5,873,356	161	186	264	25	6	47	17	136
Rochester	316,786	12	10	10		0	2	2	9
Syracuse	182,003	41	8	2		0	25	15	5
New Jersey·									
Camden	128,642	5	7	7	0	0	2	0	3
Newark	452,513	26	14	38	3	1	34	15	13
Trenton	132,020	3	7	0	0	0	3	0	1
Pennsylvania									
Philadelphia	1,979,364	165	83	56		2	9	61	43
Pittsburgh	631,563	46	25	49		5	223	64	20
Reading	112,707	19	5	3		0	0	1	2
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	29	18	13	0	5	44	1	14
Cleveland	936,485	78	54	78	1	0	21	95	12
Columbus	279,836	28	11	23	0	0	0	2	4
Toledo	287,380	97	15	9	1	0	35	17	6
Indiana·									
Fort Wayne	97,846	1	6	8	0	0	1	0	4
Indianapolis	358,819	26	14	24	0	0	1	47	6
South Bend	80,091	5	2	2	0	0	0	0	2
Terre Haute	71,071	2	3	2	0	0	2	0	3
Illinois.									
Chicago	2,995,239	127	117	116	18	5	12	27	65
Springfield	63,923	5	3	1	0	0	0	3	0
Michigan·									
Detroit	1,245,824	67	80	56	3	2	103	42	20
Flint	130,316	16	14	1	0	0	3	28	2
Grand Rapids	153,698	2	5	0	0	1	23	3	8
Wisconsin·									
Kenosha	50,891	20	2	2	0	0	0	4	1
Milwaukee	509,192	86	30	11	1	0	0	21	7
Racine	67,707	8	3	4	0	0	0	2	9
Superior	39,671	16	1	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota.									
Duluth	110,502	4	2	0	0	1	0	0	2
Minneapolis	425,435	67	29	10	0	0	0	4	10
St. Paul	246,001	15	20	1	0	0	0	9	14
Iowa·									
Davenport	52,469	0	1	0	0		1	0	
Des Moines	141,441	0	6	0	0		0	0	3
Sioux City	76,411	4	3	0	0		1	8	
Waterloo	36,771	11	0	0	0		1	0	

[1] No estimate made.

City reports for week ended December 10, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
WEST NORTH CENTRAL—continued									
Missouri:									
Kansas City	367,481	65	13	4	0	0	2	49	10
St. Joseph	78,342	4	3	1	0	0	0	0	3
St. Louis	821,543	20	52	46	0		18	14	
North Dakota:									
Fargo	26,403	42	0	0	0	0	0	0	0
Grand Forks	14,811	12	0	0	0		0	0	
South Dakota:									
Aberdeen	15,036	1	0	0	0		0	0	
Sioux Falls	30,127	0	0	0	0		0	0	
Nebraska:									
Lincoln	60,941	33	2	0	0	0	1	7	0
Omaha	211,768	21	6	3	0	0	2	0	6
Kansas:									
Topeka	55,411	18	3	0	0	2	0	0	2
Wichita	88,367	22	9	0	0	0	1	0	1
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	0	2	3	0	0	0	2	2
Maryland:									
Baltimore	796,296	80	41	29	16	2	72	7	24
Cumberland	33,741	0	1	1	0	0	0	0	1
Frederick	12,035	0	1	2	0	0	0	0	0
District of Columbia:									
Washington	497,906	18	22	20	0	0	4	0	5
Virginia:									
Lynchburg	30,395	7	2	5	0	0	0	0	2
Norfolk	(1)	29	4	2	0	0	1	0	4
Richmond	186,403	4	14	18	0	0	9	1	6
Roanoke	58,208	2	4	1	0	0	8	0	1
West Virginia:									
Charleston	49,019	2	3	2	0	1	0	0	3
Wheeling	56,208	16	3	0	0	0	0	0	1
North Carolina:									
Raleigh	30,371	12	2	2	0	0	3	0	3
Wilmington	37,061	8	1	2	0	0	136	0	1
Winston-Salem	69,031	1	2	5	0	1	4	8	4
South Carolina:									
Charleston	73,125	0	2	0	16	0	0	0	0
Columbia	41,225	13	1	0	0		17	11	2
Greenville	27,311	2	0	0	0	0	16	1	1
Georgia:									
Atlanta	(1)	3	6	3	27	2	0	2	13
Brunswick	16,809	0	0	0	0	0	1	4	1
Savannah	93,134	0	2	6	8	2	20	0	2
Florida:									
Miami	69,754	0		3	1	0	1	0	1
St. Petersburg	26,847		0			0			0
Tampa	94,743	3	2	4	0	1	0	0	1
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	3	0	0	0	0	0	2
Louisville	305,935	3	10	2	3	1	4	1	7
Tennessee:									
Memphis	174,533	17	9	5	0	3	61	24	7
Nashville	136,220	2	4	2	0	2	2	2	6
Alabama:									
Birmingham	205,670	14	6	4	10	4	5	1	7
Mobile	65,955	0	2	0	5	1	0	0	0
Montgomery	46,481	1	1	1	3	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	0	2	1	0		0	0	
Little Rock	74,216	0	2	2	1	0	12	0	4
Louisiana:									
New Orleans	414,493	4	12	19	10	0	0	0	5
Shreveport	57,857	2	2	0	0	0	11	0	2

[1] No estimate made.

City reports for week ended December 10, 1927—**Continued**

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria: Cases, estimated expectancy	Diphtheria: Cases reported	Influenza: Cases reported	Influenza: Deaths reported	Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
WEST SOUTH CENTRAL—continued									
Oklahoma:									
Oklahoma City	(1)	1	3	6	2	0	4	0	3
Tulsa	124,478	4	---	3	0	---	1	5	---
Texas:									
Dallas	194,450	11	14	14	1	1	0	0	2
Galveston	48,375	0	1	1	0	0	0	0	1
Houston	164,954	0	5	10	0	0	0	0	5
San Antonio	198,069	0	4	5	0	1	9	0	5
MOUNTAIN									
Montana:									
Billings	17,971	0	0	0	0	0	1	0	0
Great Falls	29,883	0	0	0	0	0	0	1	1
Helena	12,037	9	0	0	0	0	0	0	0
Missoula	12,668	2	0	0	0	0	0	0	0
Idaho:									
Boise	23,042	0	0	0	0	0	0	2	0
Colorado:									
Denver	280,911	36	14	7	---	1	3	10	16
Pueblo	43,787	18	4	0	0	0	0	0	4
New Mexico:									
Albuquerque	21,000	1	1	0	0	0	0	0	3
Utah:									
Salt Lake City	130,948	34	5	9	0	0	0	0	2
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	1
PACIFIC									
Washington:									
Seattle	(1)	---	8	---	---	---	---	---	---
Spokane	108,897	---	4	---	---	---	---	---	---
Tacoma	104,455	4	3	1	0	0	2	5	2
Oregon:									
Portland	283,383	30	11	6	0	1	3	2	6
California:									
Los Angeles	(1)	26	42	30	13	1	3	14	24
Sacramento	72,260	4	3	1	0	0	4	2	1
San Francisco	557,530	77	18	15	2	0	12	25	5

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
NEW ENGLAND											
Maine:											
Portland	2	4	0	0	0	0	0	1	0	5	22
New Hampshire:											
Concord	0	3	0	0	0	1	0	0	0	0	16
Manchester	2	0	0	0	0	1	0	0	0	0	20
Nashua	0	1	0	0	0	2	0	0	0	---	12
Vermont:											
Barre	1	1	0	0	0	0	0	0	0	0	2
Massachusetts:											
Boston	51	64	0	0	0	10	1	3	0	29	215
Fall River	2	5	0	0	0	3	1	0	0	3	21
Springfield	7	5	0	0	0	2	0	0	0	12	30
Worcester	12	10	0	0	0	1	0	0	0	1	57
Rhode Island:											
Pawtucket	0	2	0	0	0	0	0	0	0	0	13
Providence	7	25	0	0	0	5	1	0	0	0	62

[1] No estimate made.

City reports for week ended December 10, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
NEW ENGLAND—continued											
Connecticut:											
Bridgeport	8	3	0	0	0	1	0	1	0	4	26
Hartford	6	9	0	0	0	3	0	0	0	3	38
New Haven	7	7	0	0	0	1	1	0	0	17	47
MIDDLE ATLANTIC											
New York:											
Buffalo	22	25	0	0	0	4	1	2	0	22	119
New York	161	152	0	0	0	89	15	11	3	175	1,306
Rochester	10	8	0	0	0	3	1	1	0	7	68
Syracuse	12	4	0	0	0	1	1	0	0	4	37
New Jersey:											
Camden	5	1	0	0	0	1	1	0	0	0	26
Newark	17	14	0	0	0	7	1	1	0	60	116
Trenton	2	1	0	0	0	2	0	0	0	0	18
Pennsylvania:											
Philadelphia	70	68	0	0	0	28	4	2	0	32	415
Pittsburgh	36	34	0	0	0	10	1	0	0	12	187
Reading	1	10	0	0	0	2	0	0	0	0	22
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	15	10	0	0	0	9	1	1	0	1	158
Cleveland	34	27	1	0	0	10	2	3	1	38	177
Columbus	11	24	0	0	0	2	0	4	2	4	73
Toledo	14	18	0	0	0	10	1	3	0	2	88
Indiana:											
Fort Wayne	3	8	0	0	0	1	0	0	0	0	26
Indianapolis	13	13	4	2	0	2	0	0	0	0	94
South Bend	4	1	1	0	0	0	0	0	0	0	16
Terre Haute	4	1	0	3	0	0	0	0	0	0	11
Illinois:											
Chicago	114	110	1	0	0	53	4	2	0	76	680
Springfield	2	3	0	0	0	1	0	0	0	2	24
Michigan:											
Detroit	87	60	1	0	0	23	2	1	0	35	248
Flint	8	18	0	0	0	0	0	0	0	5	31
Grand Rapids	10	4	0	0	0	1	0	0	0	2	38
Wisconsin:											
Kenosha	1	5	0	0	0	0	0	0	0	0	8
Milwaukee	18	33	1	1	0	3	0	2	0	17	106
Racine	5	3	1	0	0	2	0	0	0	5	14
Superior	2	4	1	0	0	0	0	0	0	0	10
WEST NORTH CENTRAL											
Minnesota:											
Duluth	8	7	1	0	0	1	0	2	0	0	17
Minneapolis	50	19	5	0	0	4	1	1	0	0	76
St. Paul	25	7	3	0	0	5	1	1	1	2	69
Iowa:											
Davenport	1	3	1	0			0	0		0	
Des Moines	6	19	0	9			0	0		0	30
Sioux City	3	7	1	0			1	0		1	
Waterloo	2	1	0	0			0	0		0	
Missouri:											
Kansas City	12	8	1	1	0	4	1	2	0	3	89
St. Joseph	3	0	0	17	0	2	0	0	0	0	32
St. Louis	36	31	1	0	0	10	2	1	0	2	207
North Dakota:											
Fargo	2	6	0	0	0	0	0	0	0	3	
Grand Forks	1	0	0	0			0	0		0	
South Dakota:											
Aberdeen	1	0	0	0			0	0		0	
Sioux Falls	1	5	0	0			0	0		0	9
Nebraska:											
Lincoln	2	3	0	0	0	0	0	0	0	2	15
Omaha	6	8	2	0	0	1	0	0	0	0	43
Kansas:											
Topeka	2	0	0	1	0	0	0	0	0	0	21
Wichita	3	10	0	19	0	4	0	0	1	0	31

City reports for week ended December 10, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
SOUTH ATLANTIC											
Delaware:											
Wilmington	4	4	0	0	0	3	0	0	0	0	29
Maryland:											
Baltimore	25	8	0	0	0	16	3	1	0	14	216
Cumberland	0	2	0	0	0	0	0	1	0	0	7
Frederick	1	0	0	0	0	0	1	0	0	0	5
District of Columbia:											
Washington	19	31	0	0	0	18	2	0	0	10	127
Virginia:											
Lynchburg	1	3	0	0	0	1	0	0	0	0	15
Norfolk	2	0	0	0	0	3	0	0	0	1	------
Richmond	7	5	0	0	0	4	1	0	0	0	55
Roanoke	2	3	0	0	0	1	0	0	0	0	10
West Virginia:											
Charleston	2	2	0	0	0	1	0	0	0	0	22
Wheeling	2	2	0	0	0	0	0	1	0	0	17
North Carolina:											
Raleigh	2	3	0	0	0	1	0	0	0	0	19
Wilmington	0	0	0	0	0	0	0	1	1	0	8
Winston-Salem	1	1	1	0	0	0	0	0	0	0	20
South Carolina:											
Charleston	1	1	0	0	0	3	0	1	0	0	26
Columbia	0	0	0	0	------	------	0	0	------	3	10
Greenville	0	2	0	0	0	0	0	0	0	1	1
Georgia:											
Atlanta	4	6	2	0	0	7	1	0	0	0	73
Brunswick	0	0	0	0	0	0	0	0	0	0	5
Savannah	1	1	0	4	0	2	1	0	0	0	22
Florida:											
Miami	------	2	------	0	0	2	------	0	0	0	26
St. Petersburg	0	------	0	------	0	0	0	------	0	------	15
Tampa	0	0	1	0	0	2	0	0	0	0	24
EAST SOUTH CENTRAL											
Kentucky:											
Covington	2	1	0	0	0	3	0	0	0	0	25
Louisville	6	4	0	0	0	4	1	0	0	0	70
Tennessee:											
Memphis	5	9	0	0	0	4	1	4	1	0	70
Nashville	3	1	0	0	0	7	1	1	0	4	50
Alabama:											
Birmingham	4	1	1	1	0	3	1	0	0	0	64
Mobile	1	0	1	0	0	0	0	1	0	0	27
Montgomery	0	0	0	0	0	0	0	0	0	5	------
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	0	0	0	------	------	0	0	------	0	------
Little Rock	2	5	0	0	0	3	0	1	0	0	------
Louisiana:											
New Orleans	7	4	0	0	0	16	1	0	0	1	160
Shreveport	2	3	1	0	0	2	1	3	1	1	28
Oklahoma:											
Oklahoma City	3	1	1	8	0	3	0	0	1	0	38
Tulsa	------	2	------	0	------	------	------	0	------	0	------
Texas:											
Dallas	5	10	0	1	0	1	1	0	1	1	43
Galveston	1	0	0	0	0	2	1	0	0	0	19
Houston	3	1	1	0	0	6	0	1	1	0	76
San Antonio	1	5	0	1	0	8	1	0	1	0	61
MOUNTAIN											
Montana:											
Billings	1	1	0	0	0	0	0	0	0	0	7
Great Falls	2	0	1	0	0	0	0	0	0	0	8
Helena	0	7	0	0	0	0	0	0	0	0	1
Missoula	1	2	1	0	0	0	0	0	0	0	2

City reports for week ended December 10, 1927—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
MOUNTAIN—con.											
Idaho:											
Boise	1	0	1	0	0	0	0	0	0	1	8
Colorado:											
Denver	12	13	1	0	0	13	0	1	2	5	89
Pueblo	2	1	0	0	0	1	0	0	0	3	13
New Mexico:											
Albuquerque	1	1	0	0	0	2	0	0	0	0	9
Utah:											
Salt Lake City	2	9	1	7	0	0	0	0	0	5	37
Nevada:											
Reno	0	1	0	4	0	0	0	0	0	0	3
PACIFIC											
Washington:											
Seattle	9		2				0				
Spokane	6		5				0				
Tacoma	4	1	5	2	0	0	0	1	0	0	28
Oregon:											
Portland	8	5	6	16	0	1	0	1	0	0	76
California:											
Los Angeles	26	20	4	0	0	26	2	0	0	13	310
Sacramento	2	4	1	0	0	2	0	0	0	0	26
San Francisco	12	15	1	0	0	5	1	2	0	8	138

Division, State, and city	Meningococcus meningitis: Cases	Meningococcus meningitis: Deaths	Lethargic encephalitis: Cases	Lethargic encephalitis: Deaths	Pellagra: Cases	Pellagra: Deaths	Poliomyelitis (infantile paralysis): Cases estimated expectancy	Poliomyelitis: Cases	Poliomyelitis: Deaths
NEW ENGLAND									
Massachusetts:									
Boston	0	1	0	0	0	0	0	5	1
Fall River	0	0	0	0	0	0	0	1	0
MIDDLE ATLANTIC [1]									
New York:									
New York [1]	4	3	5	2	0	0	2	0	0
EAST NORTH CENTRAL									
Ohio:									
Cleveland	1	0	0	0	0	2	0	0	0
Columbus	0	0	0	0	0	0	0	1	0
Indiana:									
Indianapolis	0	1	0	0	0	0	0	0	0
Illinois:									
Chicago	4	1	0	0	0	0	1	0	0
Michigan:									
Detroit	1	1	0	0	0	0	0	1	0
Wisconsin:									
Milwaukee	1	1	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	2	0	0	1	0	0	0	1	0
St. Paul	1	1	0	0	0	0	0	0	0
Iowa:									
Des Moines	0	1	0	0	0	0	0	0	0
Missouri:									
Kansas City	1	0	0	0	0	0	0	2	1
St. Joseph	1	1	0	0	0	0	0	0	0
St. Louis	1	0	0	0	0	0	0	0	0
South Dakota:									
Aberdeen	1		0		0		0	0	

[1] Rabies (human): 1 case and 1 death at New York, N. Y., and 1 case and 1 death at Pittsburgh, Pa.

City reports for week ended December 10, 1927—**Continued**

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
SOUTH ATLANTIC									
District of Columbia:									
Washington	0	0	0	0	0	1	0	0	0
West Virginia:									
Wheeling	0	0	0	0	0	0	0	2	1
North Carolina:									
Winston-Salem	0	0	0	0	0	0	0	0	1
South Carolina.									
Charleston	0	0	0	0	1	0	0	0	0
Georgia:									
Atlanta	0	0	0	0	0	1	0	0	0
Savannah	0	0	0	0	1	1	0	0	0
Florida:									
Tampa	0	0	0	0	0	1	0	0	0
EAST SOUTH CENTRAL									
Alabama:									
Birmingham	0	0	0	0	1	1	0	0	0
WEST SOUTH CENTRAL									
Louisiana:									
New Orleans	0	0	0	0	4	1	0	0	0
Shreveport	0	0	0	0	0	1	0	0	0
Texas:									
Dallas	0	0	0	0	0	1	0	0	0
MOUNTAIN									
Colorado									
Denver	1	2	0	0	0	0	0	1	0
Utah:									
Salt Lake City	0	0	0	0	0	0	0	2	1
PACIFIC									
Washington:									
Tacoma	0	0	0	0	0	0	0	2	1
Oregon:									
Portland	0	0	0	0	0	0	1	4	1
California:									
Los Angeles	0	0	0	0	0	0	1	7	2
Sacramento [2]	1	0	0	0	0	0	0	1	0
San Francisco	2	1	1	1	0	0	0	1	0

[2] Tularaemia: Sacramento, 1 case.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended December 10, 1927, compared with those for a like period ended December 11, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, November 6 to December 10, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927	Nov. 27, 1926	Nov. 26, 1927	Dec. 4, 1926	Dec. 3, 1927	Dec. 11, 1926	Dec. 10, 1927
101 cities	228	[2] 215	230	228	212	[3] 204	224	[4] 233	201	[5] 205
New England	134	160	139	163	132	169	172	207	163	216
Middle Atlantic	163	205	159	234	155	213	177	252	161	228
East North Central	264	254	292	251	258	220	266	220	223	228
West North Central	222	161	214	153	192	179	210	179	194	[6] 130
South Atlantic	387	190	276	217	281	[3] 197	240	[4] 230	237	190
East South Central	264	209	367	239	217	122	300	168	284	71
West South Central	378	298	326	348	301	306	318	273	266	218
Mountain	182	279	146	207	201	171	228	144	246	144
Pacific	230	[2] 224	324	223	303	162	268	259	238	[2] 162

MEASLES CASE RATES

	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927	Nov. 27, 1926	Nov. 26, 1927	Dec. 4, 1926	Dec. 3, 1927	Dec. 11, 1926	Dec. 10, 1927
101 cities	106	[2] 96	135	125	134	[3] 137	177	[4] 190	197	[5] 221
New England	31	341	47	390	57	499	101	539	165	539
Middle Atlantic	44	124	28	93	30	129	37	180	23	199
East North Central	101	27	120	54	135	60	151	122	212	140
West North Central	147	16	198	22	109	24	113	24	129	[6] 50
South Atlantic	24	136	54	283	22	[3] 202	48	[4] 326	54	527
East South Central	10	76	31	148	16	163	26	224	78	367
West South Central	26	13	26	71	103	88	142	122	146	134
Mountain	1,531	18	1,950	72	2,543	27	2,844	27	3,217	36
Pacific	279	[2] 76	488	212	338	175	699	228	613	[2] 72

SCARLET FEVER CASE RATES

	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927	Nov. 27, 1926	Nov. 26, 1927	Dec. 4, 1926	Dec. 3, 1927	Dec. 11, 1926	Dec. 10, 1927
101 cities	206	[2] 150	212	177	213	[3] 159	242	[4] 185	238	[5] 183
New England	351	204	330	248	285	181	325	276	340	320
Middle Atlantic	125	110	130	152	138	122	157	155	178	156
East North Central	182	177	201	202	196	196	237	192	235	216
West North Central	347	185	407	232	411	204	436	250	432	[6] 197
South Atlantic	177	183	143	156	156	[3] 173	181	[4] 176	173	134
East South Central	295	153	228	112	238	87	243	148	150	82
West South Central	142	105	116	105	198	168	210	143	142	117
Mountain	702	153	638	234	784	180	930	360	802	306
Pacific	279	[2] 117	335	154	249	131	265	128	230	[2] 138

SMALLPOX CASE RATES

	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927	Nov. 27, 1926	Nov. 26, 1927	Dec. 4, 1926	Dec. 3, 1927	Dec. 11, 1926	Dec. 10, 1927
101 cities	5	[2] 16	5	19	5	[3] 22	14	[4] 17	11	[5] 11
New England	0	0	0	0	0	0	0	0	0	0
Middle Atlantic	0	0	0	0	0	0	0	0	1	0
East North Central	10	4	3	6	7	1	21	10	7	4
West North Central	10	157	4	161	30	202	48	115	38	[6] 76
South Atlantic	2	5	4	9	4	[3] 2	19	[4] 6	19	7
East South Central	10	0	0	5	5	0	0	10	21	5
West South Central	30	4	4	4	4	4	9	8	9	8
Mountain	9	27	0	27	0	54	18	45	18	99
Pacific	5	[2] 3	48	29	5	45	35	30	43	[2] 7

[1] The figures given in this table are rates per 100,000 population annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926 and 1927, respectively.
[2] Seattle, Wash., and Spokane, Wash., not included.
[3] Frederick, Md., not included.
[4] Norfolk, Va., not included.
[5] Fargo, N. Dak., Seattle, Wash., and Spokane, Wash., not included.
[6] Fargo, N. Dak., not included.

Summary of weekly reports from cities, November 6 to December 10, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927	Nov. 27, 1926	Nov. 26, 1927	Dec. 4, 1926	Dec. 3, 1927	Dec. 11, 1926	Dec. 10, 1927
101 cities	21	[2] 15	16	15	12	[3] 10	10	[4] 9	13	[4] 11
New England	9	16	7	23	7	14	7	7	2	12
Middle Atlantic	21	15	21	14	18	10	9	10	18	8
East North Central	10	9	5	7	8	6	6	5	8	9
West North Central	16	28	6	20	8	14	10	12	4	[6] 14
South Atlantic	35	20	22	25	19	[3] 9	17	[4] 17	24	9
East South Central	52	5	36	15	31	15	41	15	41	31
West South Central	34	34	13	29	17	13	9	21	13	21
Mountain	27	9	27	18	18	27	9	9	9	9
Pacific	29	[2] 7	29	13	21	5	16	5	16	[2] 10

INFLUENZA DEATH RATES

	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927	Nov. 27, 1926	Nov. 26, 1927	Dec. 4, 1926	Dec. 3, 1927	Dec. 11, 1926	Dec. 10, 1927
95 cities	14	8	10	9	10	[7] 11	14	[4] 12	17	[6] 12
New England	2	2	2	5	9	2	7	5	0	9
Middle Atlantic	10	9	10	7	7	10	13	11	12	7
East North Central	10	5	10	2	9	5	9	9	14	9
West North Central	13	2	6	10	2	6	4	4	15	[6] 6
South Atlantic	17	17	8	20	15	[3] 13	21	[4] 14	34	17
East South Central	26	15	31	20	41	46	41	46	41	56
West South Central	66	17	31	34	31	34	40	43	40	47
Mountain	27	18	9	36	36	18	46	27	36	9
Pacific	14	0	4	3	0	[8] 14	11	14	11	3

PNEUMONIA DEATH RATES

	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927	Nov. 27, 1926	Nov. 26, 1927	Dec. 4, 1926	Dec. 3, 1927	Dec. 11, 1926	Dec. 10, 1927
95 cities	106	104	123	112	126	[7] 97	123	[4] 114	129	[6] 110
New England	90	95	104	102	132	60	118	100	134	51
Middle Atlantic	115	113	136	119	138	98	151	123	140	119
East North Central	87	89	104	96	98	89	89	103	103	97
West North Central	76	75	120	81	74	87	74	71	118	[6] 101
South Atlantic	140	120	144	160	166	[3] 148	106	[4] 153	155	138
East South Central	165	138	171	148	108	127	134	199	171	148
West South Central	110	129	154	142	207	112	163	108	150	103
Mountain	155	144	109	99	146	99	210	54	109	216
Pacific	99	100	74	76	124	[8] 76	152	103	113	110

[2] Seattle, and Spokane, Wash., not included.
[3] Frederick, Md., not included
[4] Norfolk, Va., not included.
[5] Fargo, N Dak , Seattle and Spokane, Wash , not included.
[6] Fargo, N. Dak., not included.
[7] Frederick, Md., and Los Angeles, Calif , not included
[8] Los Angeles, Calif., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

THE FAR EAST

Report for the week ended November 26, 1927.—The following report for the week ended November 26, 1927, was transmitted by the eastern bureau of the health section of the secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Plague, cholera, or smallpox was reported present in the following ports:

PLAGUE

Egypt.—Alexandria.
India.—Rangoon, Bassein.
Ceylon.—Colombo.
Dutch East Indies.—Makassar.

CHOLERA

India.—Calcutta, Madras, Tuticorin, Rangoon.
Straits Settlements.—Singapore
Dutch East Indies.—Batavia.

SMALLPOX

Iraq.—Basra.
India.—Bombay, Calcutta, Madras, Tuticorin, Rangoon.
Dutch East Indies.—Banjermasin, Samarinda, Surabaya, Balikpapan.
Kwantung.—Dairen.

Returns for the week ended November 26 were not received from Canton, China, or Vladivostok, Union of Socialist Soviet Republics.

CANADA

Communicable diseases—Week ended December 10, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases from seven Provinces of Canada for the week ended December 10, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Influenza	2							2
Poliomyelitis	2			2			3	7
Smallpox				82	1	19	3	105
Typhoid fever		55	15	16		1		87

Communicable diseases—Quebec—Week ended December 10, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended December 10, 1927, as follows:

Disease	Cases	Disease	Cases
Chicken pox	38	Scarlet fever	77
Diphtheria	66	Smallpox	3
German measles	4	Tuberculosis	42
Influenza	4	Typhoid fever	15
Measles	59	Whooping cough	4

EGYPT

Plague—Alexandria—November 21-23, 1927.—During the period November 19 to 23, 1927, three cases of plague, of which two with one fatality were bubonic, and one fatal case septicemic, occurring in the same family, were reported at Alexandria, Egypt.

HAWAII TERRITORY

Plague-infected rats—November 23 and November 25, 1927.—Two plague-infected rats have been reported found on the island of Hawaii—one at Paauhau, on November 23, and one at Hamakua, November 25, 1927.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended December 30, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
India				Oct. 9-15, 1927: Cases, 6,142; deaths, 3,027.
Madras	Nov. 6-12	6	3	
Rangoon	Oct. 30-Nov. 5	1		
India (French Settlements in):				
Karikal	Aug. 26-Sept. 24	1	1	
Pondicherry	do	15	18	
Indo-China	Sept. 21-Oct. 20	586		
Annam	do	246		
Cambodge	do	139		
Cochin-China	do	171		
Laos	do	29		
Tonkin	do	1		

PLAGUE

Place	Date	Cases	Deaths	Remarks
Argentina:				
Firmat	Dec. 11-17	1		
Rosario	do	1		
Ucacha	do	1		
Ecuador:				
Guayaquil	Sept. 1-30	3		
Egypt:				
Alexandria	Nov. 19-23	3	3	
Hawaii:				
Hamakua	Nov. 25			Plague-infected rat.
Paauhau	Nov. 23			Do.
India				Oct. 9-15, 1927: Cases, 920; deaths, 598.
Madras Presidency	Oct. 16-22	172	84	
Rangoon	Oct. 30-Nov. 5	2	2	

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria				Sept. 21-Oct. 20, 1927: Cases, 578.
Arabia:				
Aden	Nov. 13-19	1		
British South Africa	Oct. 29-Nov. 4	10	23	Native.
Canada:				
Quebec	Dec. 3-10	3		
Chosen	Aug. 3-31	2		

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended December 30, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Ecuador:				
Guayaquil	Sept. 1-30	2		
France	do	8		
Gold Coast	Aug. 1-31	1		
Great Britain:				
Newcastle-on-Tyne	Nov. 20-26	28		
India				Oct. 9-15, 1927: Cases, 777; deaths, 71.
Bombay	Oct. 23-29	2	2	
Madras	Nov. 6-12	2	1	
India (French Settlements):				
Karikal	Aug. 28-Sept. 24	1	1	
Pondicherry	do	37	37	
Indo-China				Sept. 21-Oct. 20, 1927: Cases, 13.
Iraq:				
Baghdad	Nov. 6-12	5	4	
Mexico				July 1-31, 1927: Deaths, 93.
Morocco	Sept. 1-30	51		

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	July 11-Oct. 20	78	10	
Bulgaria	Aug. 11-Oct. 8	21	2	
Chosen				Aug. 1-31, 1927: Cases, 17.
Seoul	Oct. 1-31	2	1	
Japan				July 1-31, 1927: Cases, 1.
Lithuania				Sept. 1-30, 1927; Cases, 7; deaths, 1.
Mexico				July 1-31, 1927: Deaths, 12.
Mexico City	Nov. 13-19	11		Including municipalities in Federal District.
Palestine				Oct. 11-Nov. 7, 1927: Cases, 6.
Rumania				Aug. 28-Oct. 1, 1927: Cases, 21 deaths, 1.
Tunisia				Sept 11-Oct. 22, 1927: Cases 4.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Gold Coast	July 1-Sept. 30	23	10	

Reports Received from June 25 to December 30, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-Oct. 15	119	11	
Canton	May 1-Nov. 5	103	68	
Foochow	July 24-Oct. 22			Present.
Hong Kong	July 17-Sept. 3	3	3	
Kulangsu	June 21	1		
Shanghai	June 19-25	2		
Do	July 31-Oct. 22		119	In international settlement and French concession.
Swatow	May 15-Oct. 29	138	13	
Tientsin	Aug. 27-Oct. 1	14		
India	Apr. 17-Oct. 15			Cases, 194,768; deaths, 105,604.
Bombay	May 8-Sept. 17	127	57	
Calcutta	May 8-Nov. 5	891	527	
Karachi	May 29-June 4	1	1	
Madras	June 19-Nov. 12	839	445	
Rangoon	May 8-Nov. 5	27	22	
India, French Settlements in	Mar. 30-Aug. 27	253	168	
Karikal	Aug. 26-Sept. 24	1	1	
Pondicherry	do	15	13	

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 30, 1927—Continued

CHOLERA—Continued

Place	Date	Cases	Deaths	Remarks
Indo-China (French)	Apr. 1-Oct. 20			Cases, 16,150.
Annam	do	4,755		
Cambodia	do	542		
Cochin-China	do	1,777		
Saigon	June 4-Oct. 2	13	4	
Laos	July 11-Sept. 20	252		
Tonkin	Apr. 1-Oct. 20	9,819		
Iraq:				
Amarah	Oct. 2-Nov. 5	57	40	
Baghdad	July 24-Nov. 5	40	24	
Basra	July 17-Oct. 22	385	282	
Diwaniyah	Oct. 2-Nov. 5	79	44	
Hillah	do	23	15	
Kerbala	do	19	16	
Kut	do	22	13	
Muntafique	do	9	4	
Ramadi	Oct. 23-Nov. 5	37	33	
Japan:				
Yokohama	July 31-Aug. 6	1	1	
Java:				
Batavia	Reported Nov. 19	25	15	
Persia:				
Abadan	July 21-Aug. 13	215	183	
Ahwaz	July 31-Aug. 13	20	13	
Minab	Aug. 7-13		23	
Mohammerah	July 17-Aug. 27	194	155	
Nasseri	July 19-31		10	
Philippine Islands:				
Bulacan Province	June 7-July 8	3	2	
Leyte Province—				
Barugo	June 29	1	1	
Carigara	June 23	1	1	Final diagnosis not received.
Palo	May 18	1		
Manila	July 17-Aug. 27	2		
Siam	May 1-Oct. 29			Cases, 396; deaths, 237.
Bangkok	do	54	18	
On vessel:				
S. S. Adrastus	Reported Aug. 6	1	1	At Yokohama, Japan.
S. S. Montreal Maru	Sept. 20			At Muke, Japan.
S. S. Tabaristan	Oct. 6	1		Case in coolie removed at Basra.
S. S. Morea	Sept. 2			At Hong Kong; cholera-infected.
S. S. War Mehtar (oil tanker).	Aug. 4	1	1	At Saffagha, Egypt.

PLAGUE

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	Aug. 21-Oct. 20	3		
Oran	Aug. 21-Nov. 5	6	4	
Argentina	Jan. 1-Aug. 2			Cases, 80; deaths, 44.
Bahia	Nov. 21	1		In vicinity.
Province—				
Buenos Aires	Apr. 10-May 7	4	3	
Cordoba	Jan. 11-Aug. 6	52	29	
Do	Nov. 21	10		Reported as having occurred 3 weeks previously.
Corrientes	June 1	1	1	
Entre Rios	Mar. 29-Aug. 13	8	1	
Firmat	Dec. 11-17	1		
Sante Fe	Apr. 28-May 16	4	3	
Ucacha	Dec. 11-17	1		
Territory—				
Chaco—				
Barranqueras	May 29	2	2	
Formosa	June 25	3	2	
Pampa	July 27-Aug. 2	4		
Rio Negro	Aug. 6	1		
City—				
Merou	Reported July 14			Present.
Quilino	Nov. 26	1		
Rosario	May 7	1	1	
Do	Nov. 26-Dec. 17	2		
Santa Fe	May 16	4	2	
Azores:				
St. Michaels Island	May 15-Oct. 29	12	1	
Ribeira Grande	June 12-18	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 30, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Brazil:				
Sao Paulo	June 3-9	1	1	
British East Africa:				
Kenya	Apr. 24-July 31	73	14	
Mombasa	July 24-30	1	1	
Nairobi	May 22-28	6		
Tanganyika	Mar. 29-May 28		37	
Do	July 24-Oct. 1		70	
Uganda	Jan. 1-Feb. 28	138	121	
Do	Mar. 27-June 30	782	593	
Canary Islands:				
Laguna district—				
Tejina	June 17	1		
Las Palmas	Oct. 8-11	8		
Ceylon:				
Colombo	May 1-Oct. 22	24	14	Plague rats, 5.
China:				
Amoy	July 3-23			Present in surrounding country.
Mongolia	Reported Oct. 11		200	Approximate.
Tientsin	Aug. 14-20	2		
Tungliao	Reported Oct. 11-15.	200		
Ecuador:				
Guayaquil	June 1-Oct. 30	10		Rats taken, 95,408; found infected, 53.
Egypt:				
Alexandria	June 4-Sept. 2	4		
Beni-Souef	June 4-July 13	5	2	
Biba	June 4-10	1		At Nama.
Dakhalia	June 24-July 9	6	1	
Minia	Aug. 8-9	4		
Port Said	June 24-July 21	4	1	
Suez	Sept. 4	1		
Tanta district	June 4-10	1		
Greece	May 1-June 30	4	3	
Athens	June 1-Aug. 29	3		Including Piræus.
Mytilene	Aug. 9-Sept. 26	6		
Patras	May 30-Nov 5	10	3	
Hawaii Territory:				
Hamakua	July 15-Aug. 30			2 plague rodents.
Pohakea	Nov. 10			Do.
Honokaa	May 17-23	2	2	
Kapulena	Oct. 22			Do.
Kukuihaele	Aug. 12-17	1	1	Do.
Paauilo	July 26-Aug. 1		4	
India	Apr. 17-Oct. 15			Cases, 27,693; deaths, 12,412.
Bombay	May 8-Oct. 22	106	89	
Calcutta	Aug. 21-Sept. 3	18	10	
Madras	May 1-Oct. 22	2,030	948	
Rangoon	May 8-Nov. 5	88	82	
Indo-China (French)	Apr. 1-Aug. 10	50		
Saigon	Sept. 2-16	2		
Kwang-Chow-Wan	May 21-July 31	73		
Iraq:				
Baghdad	Apr. 8-May 28	12	1	
Java:				
Batavia	May 1-Nov. 5	489	469	Province.
East Java and Madura	May 22-Oct. 1	31	30	
Pasoeroean Residency	May 9			Outbreak reported at Nagdiwano.
Surabaya	Apr. 17-Oct. 22	108	106	
Madagascar				Mar. 16-Apr. 30, 1927: Cases, 256; deaths, 135.
Province—				
Ambositra	Mar. 16-Aug. 15	100	93	
Antisirabe	Mar. 16-Sept. 30	47	46	
Miarinarivo (Itasy)	do	101	90	
Moramanga	May 16-Sept. 30	35	34	
Tananarive	Mar. 16-Sept. 30	423	374	
Tananarive Town	Mar. 16-June 30	22	20	
Mauritius:				
Port Louis	May 1-June 30	1	1	
Nigeria	Mar. 1-May 31	228	17	
Peru	Apr.-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	Apr. 1-July 31	13	8	
Lima City	Apr. 1-30	5	1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 30, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Senegal	May 23–Oct. 16			Cases, 1,159; deaths, 646.
Baol	June 2–Oct. 16	235	109	
Cayor Frontier	July 4–Nov. 13	1,040	569	
Dakar	June 20–Oct. 2	147	94	
Facel	July 6	17	8	
Guindel	June 20–26	11	2	
Louga district	Sept. 18–Oct. 16	13	4	
M'Bour	July 6–10	28	23	
Medina	June 13–19	2	2	
Pout	July 4–10	1		
Rufisque	May 23–Sept. 25	228	167	
Thies district	May 23–Nov 13	35	15	
Tivaouane	June 2–July 17	50	32	
Siam	Apr. 1–June 25			Cases, 12; deaths, 8.
Do	Oct. 2–22	2	1	
Bangkok	May 8–June 11	2	1	
Do	Oct. 2–22	2		
Syria.				
Beirut	June 11–Sept. 10	4		
Tunisia	Apr. 21–July 10	144		
Tunis	July 25–Aug. 1	1		
Turkey:				
Constantinople	May 13–19	1		
Do	Sept. 18–Oct. 1	2	1	
Union of South Africa:				
Cape Province—				
Maraisburg district	May 1–14	2	2	Native.
Richmond district	Oct. 23–29	2	2	Do.
Orange Free State—				
Edenburg district	July 17–26	3	3	Natives, on farm.
Rouxville district	July 24–Aug. 6	2	2	
On vessel:				
S. S. Avoroff	June 24–30	1		Greek warship at port of Athens.
S. S. Capafric	Aug. 23	3	1	At Duala, French Cameroons, from Nigeria.
S. S. Elcano	Aug. 19	1		At Piræus, Greece.
S. S. Madonna	Aug. 24	1		At Dakar, Senegal, from ports south.
S. S. Ransholm	Aug. 5	3		At Gefle, Sweden, from Rufisque, Senegal.

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21–Oct 20			Cases, 1,533.
Algiers	May 11–June 30	8		
Oran	May 21–Nov. 12	88		
Angola	June 1–Aug. 31	47		
Loanda	Sept. 1–15	1		
Portuguese Congo	do	4		
Arabia:				
Aden	July 17–Aug. 1	2	1	
Do	Nov. 13–19	1		
Brazil:				
Bahia	Aug. 7–13	1		
Porto Alegre	July 1–Sept. 30	11		
Rio de Janeiro	May 22–Oct. 29	26	22	
British East Africa:				
Kenya	Apr. 24–May 14	7	14	
Tanganyika	Mar. 29–June 18		22	
Do	Aug. 7–Sept. 17		29	
Zanzibar	Apr. 1–Aug. 31	121	41	
British South Africa:				
Northern Rhodesia	Apr. 30–Nov. 4	369	83	
Canada	June 5–Dec. 3			Cases, 1,240.
Alberta	June 12–Dec. 3			Cases, 253.
Edmonton	Oct. 23–Nov. 26	7		
Calgary	June 12–Aug. 27	9		
British Columbia—				
Vancouver	May 23–Sept. 4	4		
Manitoba	June 5–Dec. 3			Cases, 68.
Winnipeg	June 12–Dec. 10	27		
Nova Scotia	Sept. 11–Oct. 15	2		
Halifax	Oct. 8–15	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 30, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Canada—Continued.				
Ontario	June 5-Dec. 3			Cases, 695.
Hamilton	Nov. 27-Dec. 3	2		
Kingston	Nov. 13-19		1	
Ottawa	June 12-Dec. 3	268		
Sarnia	Aug. 7-13	1		
Toronto	June 19-Dec. 3	80		
Windsor	Oct. 2-15	9		
Quebec	June 19-Dec. 10	48		
Riviere du Loup	Oct. 29-Nov. 19	6		
Saskatchewan	June 12-Dec. 3			Cases, 208.
Moose Jaw	Aug. 14-Oct. 22	24		
Regina	July 17-Nov. 12	16		
Ceylon	May 1-7			Cases, 3; deaths, 2.
Colombo	July 31-Aug. 6	1	1	
China:				
Amoy	May 8-28	1		
Do	July 3-16			Present in surrounding country.
Antung	July 4-31	3		
Canton	Sept. 18-24	1	1	
Chefoo	May 8-14			Present.
Do	Oct. 9-29			Do.
Foochow	May 8-Oct. 22			Do.
Hong Kong	May 8-Sept. 17	22	21	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-July 30	8		
Dairen	May 2-June 8	10	5	
Fushun	May 15-Nov. 12	12		
Harbin	June 13-July 10	4		
Kaiyuan	July 3-9	2		
Mukden	May 22-Oct. 29	9		
Pensihu	July 3-Oct. 1	2		
Ssupingkai	May 8-July 9	2		
Tientsin	May 8-Oct. 29	39	4	
Chosen	Feb. 1-Aug. 31			Cases, 528; deaths, 211.
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr. 1-30	1		
Curacao	May 29-June 4	1		Alastrim.
Ecuador:				
Guayaquil	June 1-Oct. 31	7		
Egypt	May 7-Sept. 30			Cases, 21, deaths, 4.
Alexandria	May 21-June 17	4	1	
Cairo	Jan. 22-Apr. 15	14	3	
France	Apr. 1-Sept. 30			Cases, 215.
Lille	July 24-30	1		
Paris	May 21-July 31	14	2	
Gold Coast	Mar. 1-Aug. 31	43	7	
Great Britain:				
England and Wales	May 22-Nov. 19			Cases, 4,702.
Birmingham	Aug 14-Sept. 30	2		
Bradford	May 20-June 11	2		
Do	Oct 23-Nov. 19	11		
Bristol	Oct 16-Nov. 26	12		
Cardiff	June 19-July 2	4		
Do	Oct. 23-29	1		
Leeds	July 17-Nov. 26	31		
Liverpool	July 17-30	1		
London	May 15-June 18	2		
Manchester	Oct. 2-Nov. 26	7		
Newcastle-upon-Tyne	June 12-Nov. 26	42		
Nottingham	Nov 20-26	1		
Sheffield	June 12-Nov. 19	42		
Stoke-on-Trent	Aug. 21-27	1		
Scotland—				
Dundee	May 29-Sept. 3	6		
Greece	June 1-30	14		
Saloniki	July 12-Aug. 15		2	
Guatemala:				
Guatemala City	June 1-30		9	
Guinea (French)	June 4-10	9		
India	Apr. 17-Oct. 15			Cases, 80,177; deaths, 23,118.
Bombay	May 28-Oct. 29	256	162	
Calcutta	May 8-Nov. 5	418	320	
Karachi	May 15-Aug. 6	10	5	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 30, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
India—Continued.				
Madras	May 22-Nov. 12	44	10	
Rangoon	May 8-Oct. 29	213	161	
India, French Settlements in	Mar. 20-Aug. 27	174	155	
Karikal	Aug. 28-Sept. 24	1	1	
Pondicherry	do	37	37	
Indo-China (French)	Mar. 21-Oct. 20			Cases, 345.
Saigon	May 14-Sept. 9	4	1	
Iraq:				
Baghdad	Apr. 10-Nov. 12	17	10	
Basra	Apr. 10-Oct. 15	11	10	
Italy	Apr. 10-May 21	13		
Rome	June 13-July 17	3		Including consular district.
Jamaica	May 29-Nov. 26	48		Reported as alastrim.
Japan	Apr. 3-May 7			Cases, 19.
Nagasaki City	June 20-Aug. 14	26	7	
Taiwan Island	May 21-31	1		
Java:				
Batavia	May 22-Nov. 12	36	15	
East Java and Madura	Apr. 24-Oct. 15	53	2	
Latvia	Apr. 1-30	1		
Mexico	Mar. 1-July 31			Deaths, 714.
Acapulco	Aug. 23-Sept. 17	2	2	
Durango	June 1-30		1	
Guadalajara	Nov. 15-21		1	
Monterey	July 1-31	6	4	
San Luis Potosi	May 29-Aug. 13		11	
Tampico	June 1-July 31	1	2	
Torreon	Aug. 7-Oct. 1		2	
Morocco	Apr 1-Sept 30	334		
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in 2 localities.
Pasir Residency	Apr 30-May 6			Epidemic outbreak.
Samarinda Residency	May 21-27			Do.
Nigeria	Mar. 1-July 31	2,844	653	
Paraguay:				
Asuncion	July 10-23		2	
Persia:				
Teheran	Feb. 21-July 23		16	
Poland	Apr. 10-Aug. 6	20	2	
Portugal:				
Lisbon	May 29-Nov. 5	32	1	
Oporto	Sept. 3-9	1		
Senegal:				
Medina	July 4-10	7		
Siam	Apr. 1-Oct 29			Cases, 276; deaths, 68.
Bangkok	May 1-Sept. 10	16	8	
[Sp]ain:				
Madrid	Aug. 1-31		1	
Malaga	Nov 11-25		1	
Valencia	May 29-June 4	3		
Do	Sept 25-Oct. 1	1		
[Strai]ts Settlements	June 12-18			Cases, 3.
Singapore	Apr 1-June 18	7	2	
[Sum]atra:				
Medan	June 5-Aug. 20	3		
[Swi]tzerland:				
Berne	June 26-July 2	1		
Syria:				
Damascus	Aug. 11-Nov. 10	65		
Tunisia	Apr. 1-June 10			Cases, 10.
Tunis	June 1-10	1		
Union of South Africa:				
Cape Province	July 7-Aug. 20			Outbreaks.
Do	Oct. 2-8			Do.
Elliott district	May 11-June 10			Do.
Idutywa district	July 3-9			Do.
Kalanga district	May 11-June 10			Do.
Mount Ayliffe district	July 31-Aug. 6			Do.
Orange Free State	Aug. 7-13			Do.
Transvaal—				
Barberton district	May 1-7			Do.
Johannesburg	Oct. 23-29	7		
Venezuela:				
Maracaibo	July 12-Oct. 8		4	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 30, 1927—Continued

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria	Apr. 21-Oct. 20			Cases, 477; deaths, 49.
Algiers	May 11-Oct. 20	34		
Oran	May 21-Aug. 31	34		
Argentina:				
Rosario	Aug. 1-31		1	
Bulgaria	Mar. 1-Oct. 8			Cases, 266; deaths, 23.
Sofia	June 4-Nov. 11	22	1	
Chile:				
Antofagasta	Apr. 16-May 31	1		
Do	Sept. 25-Oct. 1		1	
Concepcion	May 29-June 4		1	
La Calera	Apr. 16-May 31	1		
Ligua	Mar 16-31	2		
Puerto Montt	Apr. 16-May 31	2		
Santiago	do	5	1	
Talcahuano	July 10-16		1	
Valparaiso	Apr. 16-Sept. 3	5	3	
Do	Oct. 6-12	1	1	
China:				
Manchuria—				
Harbin	July 25-Aug. 21	5		
Mukden	May 29-June 4	1		
Tientsin	July 10-24	3		
Chosen	Feb. 1-Aug. 31			Cases, 810; deaths, 68.
Chemulpo	May 1-Aug. 31	3		
Gensan	do	4		
Seoul	Apr. 1-Oct. 31	37	4	
Czechoslovakia	Apr. 1-July 31			Cases, 55.
Egypt	May 28-Oct. 21			Cases, 139; deaths, 24.
Alexandria	May 21-Aug. 5	13	5	
Cairo	Jan. 15-July 1	43	16	
Port Said	Sept. 24-30	1		
Estonia	Apr. 1-June 30			Cases, 5.
Greece	June 1-30	2		
Athens	June 1-Sept. 30	2	9	
Guatemala:				
Guatemala	Aug. 25-31		1	
Iraq:				
Baghdad	Apr. 24-30	1		
Irish Free State:				
Cork County	July 3-9	1		In urban district.
Donegal County—				
Letterkenney	Oct. 16-22	4		
Italy	Year, 1926			Cases, 34.
Naples	do	31		
Japan	July 1-31	1		
Latvia	Apr. 1-July 31	32		
Lithuania	Feb. 1-Aug. 31	365	50	
Mexico	Feb. 2-July 31			Deaths, 178.
Guadalajara	Nov. 22-28		1	
Mexico City	May 29-Nov. 13	106		Including municipalities in Federal District.
San Luis Potosi	July 31-Aug. 6		1	
Morocco	Apr. 1-Sept. 20	981		
Palestine	May 24-Nov. 7			Cases, 44.
Haifa	do	10		
Jaffa	Aug. 2-Oct. 3	3		
Jerusalem	June 28-Aug. 15	3		
Mahnaim	May 17-23	1		In Safad district.
Nazareth	July 19-25	1		
Safad	May 17-Aug. 8	10		
Tel Aviv	Oct. 1-10	1		
Peru:				
Arequipa	Apr. 1-30		1	
Do	Aug. 1-Sept. 30		3	
Poland	Apr. 10-Oct. 22	1,167	100	
Portugal:				
Lisbon	May 29-June 4	1		
Oporto	Aug. 20-27	1		
Do	Oct. 23-29	1		
Rumania	Apr. 3-Oct. 1	1,021	70	
Spain:				
Seville	Aug. 19-25		2	
Syria:				
Aleppo	Sept. 11-17	2		
Tunisia	Apr. 22-Oct. 22			Cases, 162.
Tunis	July 5-Aug. 21	2		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from June 25 to December 30, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa	Apr. 1-30			Cases, 55; deaths, 8, native. In Europeans, cases, 2
Cape Province	Apr. 1-Oct. 29	42	5	
Albany district	June 5-11			Outbreaks.
East London	May 22-28	1		Do.
Glen Gray district	May 1-7			Do.
Kentani district	June 26-July 2			Do.
Port Elizabeth	Aug. 7-13	1		Do
Qumbu district	May 1-7			Do.
Umzimkulu district	June 26-July 2			Do.
Natal	Apr. 1-Aug. 6	7	3	
Do	Oct. 16-22			Do.
Impendhle district	June 5-11			Do.
Orange Free State	Apr. 1-Oct. 1	5		
Transvaal	Apr 1-30	1		
Johannesburg	July 3-Aug. 20	10	5	
Do	Oct. 9-15	5		
Yugoslavia	May 1-Oct. 31			Cases, 25; deaths, 5.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Ashanti:				
Obuasi	Aug. 6	1	1	
Dahomey (West Africa).				
Porto Novo	July 1	1	1	In Syrian woman.
Gold Coast	Apr. 1-Sept. 30	83	32	
Ivory Coast	July 29	1	1	
Liberia·				
Monrovia	May 29-Sept. 10	5	5	
Senegal	Oct. 3-Nov. 13			Cases, 60; deaths, 55.
Dakar	July 9	1		
Do	Aug. 8		2	
Do	Sept 17			Present.
Do	Oct 3-Nov. 20	26	20	
Geoul	Sept. 26-Oct. 2	1	1	
Island of Goree	Aug. 22-Sept. 4	2	2	
Kebemer	Oct. 9-23	2	2	
Kelle	Oct. 9-30	3	2	
Keur Sanba Kane	Oct. 31-Nov. 6	1	1	
Keur Madiop	Oct. 24-30	1	1	
Khombole	Aug. 1-Nov. 20	7	4	
Louga	Sept. 26-Nov. 13	5	5	
Mekhe	Oct. 17-Nov. 13	6	3	
M'Bour	May 27-June 19	5	5	
N'Dande	Oct. 17-Nov 6	4	3	
Ouakam	June 2-Aug 14	4	2	
Pout	Sept. 19-25	1	1	
Rufisque	Oct. 9-16	1	1	
Sebikotane	Oct 17-Nov. 13	4	2	
St. Louis	Aug. 1-Oct. 2	3	3	
Thies	July 10	1	1	In European.
Do	Sept 12-Nov. 20	16	16	
Tiaroye	Aug 22-Sept. 4	1	1	
Tivaouan	May 27-Sept. 11	6	5	
Togoland:				
Meiatza	Aug. 15-21	1	1	
On vessel·				
S. S. Desirade	Sept. 16	1	1	At Leixoes, Portugal, in passenger from Dakar, Senegal.

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